

## 2 Silent Killers – the Toxic Legacy of Biocides in Britain

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### Introduction and explanation of terms

#### What is a biocide?

It is a chemical that kills life. It can be a natural chemical. But nowadays they are mostly man-made chemicals. In modern life there are thousands of man-made chemicals used in consumer products, in food and in the environment, most of which are untested and not measured. In agriculture there are insecticides that kill insects, herbicides that ‘control unwanted vegetation’, fungicides that kill fungi or fungal spores, nematocides that kill plant-parasitic nematodes and molluscicides that kill slugs and snails. The general term for them is ‘pesticides’ but the agrochemical industry prefers to call them ‘plant protection products’ (PPPs). Many farmers in the UK use PPPs, which means that there are pesticide residues in all our non-organic food.

A Report by Pesticides Action Network- UK has shown that in 2003 25% of non-organic food contained pesticide residues and this had increased to 46% in 2013. A further Report in 2014 by PAN-UK: Pesticides in your daily bread showed that nearly two-thirds of bread contained one or more pesticides and the three most frequently found were glyphosate, chlormequat and malathion.

#### What is an endocrine disrupting chemical?

For most chemicals, ‘the dose makes the poison.’ The more you give, the more effect you get, so for regulators it is possible to define a ‘safe dose’. The most worrying are those known as ‘endocrine disrupting chemicals’ (EDCs). They act on delicate hormone systems in the human body and for them there may be no safe dose for exposure. Some governments such as Sweden want the criteria for EDCs to be defined, because there is current evidence of: 1) a high incidence, and increasing trends, of many endocrine -related disorders in humans; 2) observations of endocrine-related effects in wildlife populations; 3) identification of chemicals with endocrine disrupting properties linked to disease outcomes

in laboratory studies.

*“Endocrine-related disorders in humans are manifest by:*

- ∞ *Increases in low semen quality in young men (up to 40%)*
- ∞ *Incidence of genital malformations has increased over time*
- ∞ *Adverse pregnancy outcomes and birth defects has increased in many countries*
- ∞ *Neurobehavioural disorders related to thyroid dysfunction has increased*
- ∞ *Endocrine-related cancers (breast, endometrial, ovary, prostate, testicular and thyroid cancers) have been increasing over the past 40–50 years*
- ∞ *Earlier onset of breast development in young girls which leads to breast cancer*
- ∞ *The prevalence of obesity and type 2 Diabetes is increasing. The WHO estimates that 1.5 billion adults worldwide are overweight or obese and that the number with type 2 diabetes increased from 153 million to 347 million between 1980 and 2008”*

Naturally the Agrochemical Industry is reluctant to define EDCs, because they know that it will impact on their sales. They are trying to weaken the criteria for how to define them.

### **What is meant by the term ‘silent killer’?**

Chemical biocides that you can’t see, taste or smell but nevertheless they are in the air, the soil, rainfall, in food and accumulating in your body. In 2003 WWF-UK visited 13 locations in England, Northern Ireland, Scotland and Wales and took blood samples from 155 volunteers. Lancaster University analysed the samples for 78 chemicals: 12 organo-chlorine pesticides (including DDT and lindane), 45 PCB congeners and 21 polybrominated diphenyl ethers (PBDE) flame retardants, including those found in the commercially traded penta-, octa- and deca-BDEs. They found that *“Every person tested is contaminated by a cocktail of known highly toxic chemicals which were banned from use in the UK during the 1970s and which continue to pose unknown health risks. We found 70 (90 per cent) of the 78 chemicals we looked for in the survey. The highest number of chemicals found in any one person was 49- nearly two thirds (63 per cent) of the chemicals looked for. Every person is contaminated by chemicals from each group: organochlorine pesticides, PCBs and PBDEs (flame retardants). The use of DDT was banned in the UK more than 20 years ago. The most frequently detected chemicals were PCB congeners 99 and 118 and the DDT. metabolite p,p’-DDE, which were detected in all but one of the 155 volunteers.”*

### **The Report was published: CONTAMINATION: The results of WWF-UK’s Bio-monitoring Survey November 2003.<sup>1</sup> Why don’t we know about this survey?**

On the second page there was a picture of a baby superimposed by a challenge: WHO CARES WHERE THE CHEMICALS END UP? “This advertisement appeared in the media in 2002 but the Agrochemical Industry complained to the Advertising Standards Authority (ASA). The ASA banned it. It made the following statement: *“The ASA found WWF’s scientific research to be above reproach on all fronts and rejected every technical complaint. But despite being ruled factually accurate and being in the public interest, the advertisement was nevertheless banned on the grounds that it was ‘unduly alarming’.*

### **What is a lobbyist?**

A lobbyist is someone hired by a business or cause to persuade legislators to support that business or cause. Lobbyists get paid to win favour from politicians. Corporate Europe Observatory says: *“Brussels nowadays is the second capital of corporate lobbying in the world – after Washington DC. An estimated 20,000-30,000 lobbyists populate the EU quarter, the large majority of whom represent corporations. All big corporations have their own lobby offices and in-house lobbyists.”*

<sup>1</sup> <http://www.wwf.org.uk/filelibrary/pdf/biomonitoringresults.pdf>

### What are conflicts of interest?

A conflict of interest (COI) is a situation in which a person or organization is involved in multiple interests, financial or otherwise, one of which could possibly corrupt the motivation or decision-making of that individual or organization.

Some examples: few people are aware that the Chairman of Cancer Research UK Michael Pragnell was founder of Syngenta and former Chairman of CropLife International. That the website should claim that there was little evidence that pesticides cause cancer and for CRUK to promote the idea that alcohol causes 7 types of cancer and that the idea is endorsed by Public Health doctors and by journalists constitutes a conflict of interest.

The industry-funded UK Science Media Centre is able to feed journalists with a corporate agenda. The Séralini 2-year feeding study that showed that rats fed GM Maize and Roundup developed liver and kidney damage and hormone and sex-dependent tumours gave the opportunity for Monsanto scientists to claim fraudulent science. It was not reported by the UK media (apart from John Vidal in *The Guardian*) but had widespread coverage throughout the world, particularly in France.

A third example: Professor Alan Boobis is Vice-President of the International Life Sciences Institute (ILSI) Europe, an industry-funded organisation that had received money from both Monsanto and CropLife International. Angelo Moretti is a board member of ILSI's Health and Environmental Services Institute. Boobis and Moretti were Chair and co-Chair respectively of the Joint FAO/WHO Meeting on Pesticides Residues (JMPR) that made the decision that glyphosate was non-carcinogenic and non-genotoxic. *"In 2012, the ILSI group took a \$500,000 (£344,234) donation from Monsanto and a \$528,500 donation from the industry group CropLife International, which represents Monsanto, Dow, Syngenta and others according to documents obtained by the US right to know campaign."*<sup>2</sup>

Professor Alan Boobis is also current Chairman of the UK Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (COT). It is allegedly an independent scientific committee. However, that is a conflict of interest.

### Monsanto Chief Executive said that glyphosate doesn't cause cancer but it was a lie

Monsanto said the same thing about Polychlorinated Biphenyls (PCBs), but it was found that the corporation had known about the links between PCBs and non-Hodgkin Lymphoma for 7 years and still kept on using them. In fact, when PCBs were banned in the US in 1971, the Tory (Heath) government at the time agreed to increase the manufacturing capacity in the Monsanto factory in Newport. Waste was dumped at sites around Wales. The secret sealed long-term studies that Samsel obtained from the US EPA that showed that Monsanto knew glyphosate caused cancer from the 1970s and cataracts and eye damage from 1990.

### Why haven't we been told the truth by the government?

The government cares more about money and the economy than they do about people and the environment. This was despite declaring (when they voted to endorse EFSA's opinion on glyphosate): *"the government supports pesticide use where scientific evidence shows that it is not expected to harm people or to have unacceptable effects on the environment"*

**Glyphosate has poisoned our Nature Reserve but still the British Government doesn't care and has voted to relicense it**

<sup>2</sup> <https://www.theguardian.com/environment/2016/may/17/unwho-panel-in-conflict-of-interest-row-over-glyphosates-cancer-risk>

It appears that the UK government has willingly sacrificed its people for many years to the Agrochemical and Pharmaceutical Corporations in exchange for money. Michael Pragne MA MBA was the founder of Syngenta and CEO of Syngenta AG based in Switzerland. He was appointed a Trustee of Cancer Research UK (CRUK) in March 2010 and Chairman in November 2010. Syngenta's parent company is AstraZeneca. AstraZeneca manufactures six different anti-cancer drugs mainly aimed at breast and prostate cancer. The Corporation has links in Asia, including Hospitals in China, Japan, Korea, and collaborators in Russia. AstraZeneca's Oncology Website<sup>3</sup> in 2012 had the following portentous prediction: "*Cancer claims over 7 million lives every year and the number continues to rise. Deaths are estimated to reach 12 million by 2030.*" CRUK is donating money (£450 million/year in 2012) to the Government's Strategy for UK Life Sciences<sup>4</sup> and AstraZeneca is providing 22 compounds to academic research to develop medicines.

The government wants to introduce **fracking** with yet more polluting chemicals against the wishes of the people. On 25 November 2016 it was revealed that: "*Ministers deliberately delayed a controversial fracking report it was being forced to publish until after crucial council decisions on planning permission.*" The Defra Report, highly redacted, showed fracking could affect house prices, health and the environment.<sup>5</sup> Councillor Marcus Johnstone, who proposed the LCC motion that requested the report to be published in full, said: "*It is dirty tricks of the highest order – a real eye-opener. It shows complete contempt for local democracy. It is very obvious they were hellbent on fracking happening anyway, whatever we said in Lancashire.*"

A Public Health England Report claimed that fracking was safe for human health, but researchers from the American Chemical Society scoured databases and reports to compile a list of the chemicals commonly used in fracking. They assembled a list of 190 of them, and considered their properties. For around one-third of them, there was very little data about health risks, and eight of them were toxic to mammals.

Fracking is a highly controversial technique and has not been handed a clean bill of health by the scientific societies only by the fracking companies themselves.

### **Why haven't we been told the truth by the UK Media?**

It is hard to know, but according to F William Engdahl, "*the conspiracy evidently involved some form of collusion between Monsanto and the GMO agrichemical cartel, EU commissioners, the GMO panel members of EFSA, complacent major media and several member governments of the EU, including Spain and Holland*"<sup>6</sup>

Indeed, the Agrochemical industry wields massive power around the world. Perhaps they 'placed' the current Editors-in-Chief in position in order to support the government in their aim to introduce GM crops.<sup>7</sup> WWF-UK had frightened the pesticides industry when they undertook a bio-monitoring survey of people in 2003. So they organized the CEO to be replaced by Robert Napier in 2004. "*Napier had spent most of his career working for environmental despoilers, took over the running the UK arm of the Worldwide Fund for*

<sup>3</sup> <http://www.astrazeneca.co.uk/medicines/oncology>

<sup>4</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/32457/11-1429-strategy-for-uk-life-sciences](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences)

<sup>5</sup> <https://www.theguardian.com/environment/2016/nov/25/government-accused-of-dirty-tricks-over-controversial-fracking-report>

<sup>6</sup> Cancerous rats, corruption and Terminator seeds: Engdahl Newsletter Five: The Incredible Seralini Affair © F. William Engdahl

<sup>7</sup> Observer Editorial 14<sup>th</sup> March 2014: We must have GM crops.

*Nature (WWF).<sup>8</sup> It was a surprising choice. 'It's like putting King Herod in charge of a crèche,' said one commentator. "But with the corporate world becoming ever more sophisticated in its relations with the environmental movement, the fund wanted someone who could talk on level terms with the City." So WWF-UK ended up dropping its pesticides monitoring unit, handing over to CHEM Trust and working with Monsanto on Responsible Soy. When we challenged WWF-UK about it the WWF-US made a statement. This is part of it: "WWF co-founded the Roundtable on Responsible Soy (RTRS), a multi-stakeholder initiative to encourage environmentally, socially and economically sound soy production. Monsanto is a member of the RTRS, and a prominent actor in genetically modified soy production, but their membership does not mean that WWF endorses their position or actions. We believe that being part of the RTRS to develop standards with other stakeholders will have a much greater impact than refusing to participate and so we will continue to do so. Moreover, we maintain the precautionary principle to use of GMOs."*

**The European Press informs their citizens the truth about how pesticide exposure damages foetal and infant brains and causes cancer: we have a right to information**

*Le Monde* journalist Stéphane Foucart tells us what the pesticides industry is up to in the UK; who Syngenta is funding in Exeter to produce questionable bee research, that the German Rapporteur Member State Pesticides Risk Assessment Committee has industry members and to what extent Monsanto was involved in the retraction of the Séralini study from *Food and Chemical Toxicology*. *Le Monde* gave good coverage to the international Monsanto Tribunal. France and Germany have a much higher Biodiversity Intactness Index than the UK<sup>9</sup> and French women have not altered their weight in 40 years.<sup>10</sup> The German Government has said that the "European Authorities twisted or ignored scientific facts and distorted the truth to enable the conclusion that glyphosate is not to be considered a carcinogen, thereby accepting and reinforcing the false conclusion proposed by the Monsanto-led GTF. The German Federal Institute for Risk Assessment (BfR) and the European Food Safety Authority (EFSA) committed scientific fraud."

However, it seems to be business as usual in Europe; the British Government seems to have no idea because it has not been reported in the British Media. Has the following been reported?

**European Court of Justice ruled that safety tests must be disclosed**

**European Court of Justice ruled that safety tests conducted by the chemical industry and used by regulators to assess the dangers of pesticides must be disclosed**

Luxembourg/Brussels, 23 November 2016 Research on dangers of pesticides must be made public. Information on emissions into the environment must be disclosed.<sup>11</sup>

The European Court of Justice ruled today that safety tests conducted by the chemical industry and used by regulators to assess the dangers of pesticides must be disclosed. It argued that such research falls under "information on emissions into the environment", as defined under the Aarhus Convention and the EU law implementing this Convention.

<sup>8</sup>

<https://www.theguardian.com/environment/2004/jan/11/business.conservationsandendangeredspecies>

<sup>9</sup> <https://ww2.rspb.org.uk/whatwedo/stateofnature2016>

<sup>10</sup> <http://www.theguardian.com/society/2016/mar/31/one-fifth-of-worlds-adults-will-be-obese-by-2025-study-predicts>

<sup>11</sup> <http://www.greenpeace.org/eu-unit/en/News/2016/Landmark-ECJ-ruling-research-on-dangers-of-pesticides-must-be-made-public/>

Greenpeace EU food policy director Franziska Achterberg said: *"The ruling says that regulators must release all research used to evaluate the dangers of pesticides, and cannot keep it secret to protect industry interests. Based on the ruling, national and EU authorities should release these studies automatically, and not only following freedom of information requests. Transparency in pesticide assessments is vital, as public health and our environment are at risk."*

## **The European Pesticide Regulatory Authorities and UK 'experts' gave glyphosate a clean bill of health**

### **The German Government summoned Prof Dr Andreas Hensel before the Committee on Agriculture and Food and accused BfR of scientific fraud for using GTF statistics**

The report says that BfR stands *"accused of endangering the population"* and also of *"intentional falsification of the content of scientific studies"*.<sup>12</sup>

*"The statistical dodge employed by the German authorities to defend glyphosate was the subject of an explosive in-depth news report that aired on German TV last October (2015) in the midst of deliberations by EU authorities on whether to re-authorize the chemical.*

*The news report was broadcast by MDR, which is part of ARD, the main public national TV network in Germany. The report says that BfR stands "accused of endangering the population" and shows BfR director Prof Andreas Hensel facing questions from experts before the German Parliamentary committee for food and agriculture.*

*One of the experts, Prof Dr Eberhard Greiser, a retired epidemiologist at the University of Bremen, says of BfR's actions, "I'd say this is an intentional falsification of the content of scientific studies."*

*The MDR film notes that BfR, in its initial report to the EU authorities, claimed that there were no signs of cancer in the animal studies: "They took the position that even though one of the five studies on mice did show a significant increase in malignant lymphoma, they dismissed it as irrelevant, because, the BfR asserted, the other four studies did not indicate any cancer risk..." But Dr Peter Clausing showed how they did it.*

### **Dr Peter Clausing gave evidence at the International Monsanto Tribunal<sup>13</sup>**

*"Ample evidence has been provided above showing that European Authorities twisted or ignored scientific facts and distorted the truth to enable the conclusion that glyphosate is not to be considered a carcinogen, thereby accepting and reinforcing the false conclusion proposed by the Monsanto-led GTF. The German Federal Institute for Risk Assessment (BfR) and the European Food Safety Authority (EFSA) committed scientific fraud."*

In his evidence to the Tribunal, Clausing systematically demolished arguments that the EU authorities used to dismiss the significant findings of glyphosate-induced malignant lymphoma in mouse carcinogenicity studies.

### **On 21 March 2016: Baroness Chisholm of Owlpen (Con)<sup>14</sup> announced in the House of Lords**

My Lords, the Government support pesticide use where scientific evidence shows that this is not expected to harm people or to have unacceptable effects on the environment. UK experts participated in the European Food Safety Authority's assessment of glyphosate and support its conclusions particularly that glyphosate does not cause cancer.

<sup>12</sup> <http://www.gmwatch.org/news/latest-news/17307-german-toxicologist-accuses-eu-authorities-of-scientific-fraud-over-glyphosate-link-with-cancer>

<sup>13</sup> [http://www.pan-germany.org/download/Memo\\_Monsanto-Tribunal\\_Peter\\_Clausing\\_10\\_2016.pdf](http://www.pan-germany.org/download/Memo_Monsanto-Tribunal_Peter_Clausing_10_2016.pdf)

<sup>14</sup> Food safety:glyphosate:

<http://www.publications.parliament.uk/pa/ld201516/ldhansrd/text/160321-0001.htm>

The complete recordings from the International Monsanto Tribunal are now available  
Below is the link to Dr Peter Clausing's presentation: his is the third one on page 8.<sup>15</sup>

**But BfR had committed far more crimes against humanity than just scientific fraud: they intentionally allowed GTF to delete many papers worldwide that showed that glyphosate caused birth defects and cancers, and those that provided evidence of bioaccumulation**  
Even the ones that were allowed, BfR managed to excludethem by saying that they didn't meet the Klimisch criteria: these criteria were devised by Klimisch in 1997, a BASF scientist, and was a method of assessing the reliability of toxicological studies for regulatory purposes  
By this method BfR eliminated the work that Monsanto fearedthe most (apart from that of Séralini and his colleagues in France) by Prof Andrès Carrasco and his team in Buenos Aires that showed that glyphosate caused malformations in amphibian and chicken embryos, confirming the effects on humans in the Crop-sprayed towns of Argentina.<sup>16</sup>

*Abstract: Reports of neural defects and craniofacial malformations from regions where glyphosate-based herbicides (GBH) are used led them to undertake an embryological approach to explore the effects of low doses of glyphosate in development. Treated embryos were highly abnormal with marked alterations in cephalic and neural crest development and shortening of the anterior-posterior (A-P) axis. It was shown that the effects were due to the glyphosate itself, rather than the additive.*

#### **How BfR managed to eliminatethis study and all those reporting reproductive toxicity**

In the Renewal Assessment Report (RAR) for glyphosate a total of 18 peer-reviewed publications showing reproductive toxicity were ranked 3 – not reliable. The RAR commented on the study by *Paganelli et al.* (i.e. the Carrasco study).  
‘The study reported endocrine disruption but was deemed “ *not reliable*”. The RAR commented: “*Non-Guideline study that is not sufficiently described for assessment- Inadequate positive and negative control experiments. Irrelevant routes of exposure and inappropriately high doses. Test system not adequate for human risk assessment*”. [Volume 3 Annex B.6.1, p 669] Furthermore, “*multiple high quality toxicity studies and expert review panels consistently agree glyphosate is not a teratogen or reproductive toxicant. The author's justification for this research is flawed, providing no valid basis, other than an opinion, of an increase in the rate of birth defects in Argentina. Direct injection of frog embryos and through chick egg shells do not reflect real world exposure scenarios to either environmental species or humans.*”<sup>17</sup> In fact there were several papers on the increase in the rate of birth defects in South America where GM Roundup Ready crops are grown; but the GTF had excluded all of them.

They also excluded the laboratory study by Thongprakaisang, S., et al. (2013). Glyphosate induces human breast cancer cells growth via estrogen receptors. *Food Chem Toxicol* 59: 129-136.<sup>18</sup> This showed that glyphosate could act at extremely low doses. The study found that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations. “*The present study used pure glyphosate substance at log intervals from 10<sup>12</sup> to 10<sup>-6</sup> M. These concentrations are in a crucial range which correlated to the potential biological levels at part per trillion (ppt) to part per billion (ppb) which have been reported in*

<sup>15</sup> <https://vimeo.com/channels/mten/page:8>

<sup>16</sup> Paganelli, A. *et al.* Glyphosate-Based Herbicides Produce Teratogenic Effects on Vertebrates by Impairing Retinoic Acid Signaling *Chem. Res. Toxicol.* , 2010, 23 (10), 1586–1595

DOI: 10.1021/tx1001749 <http://pubs.acs.org/doi/abs/10.1021/tx1001749>

<sup>17</sup> [http://www.i-sis.org.uk/Scandal\\_of\\_Glyphosate\\_Reassessment\\_in\\_Europe.php](http://www.i-sis.org.uk/Scandal_of_Glyphosate_Reassessment_in_Europe.php)

<sup>18</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23756170>

*epidemiological studies.*” These were order of concentrations that were found in August 2013 and 2014 in tap water and river water in Swansea.

## **BfR claimed glyphosate had only minimal effects on ecosystems**

**The German Rapporteur Member State Federal Institute for Pesticides Risk Assessment (BfR) Renewal Assessment Report (RAR) on Ecotoxicity<sup>19</sup> told yet another lie**

The Glyphosate Task Force’s evaluation of peer-reviewed literature regarding ecotoxicity broadly concluded that glyphosate is not harmful to the environment.

### **Speckled Bush Crickets<sup>20</sup> and The Year of the Bumblebee<sup>21</sup>**

I challenged EFSA about this assertion by BfR. These books were written in 2009 and 2010. Since 2013 the reserve has suffered massive biodiversity losses secondary to ultra-low dose Roundup sprayed outside the area on Japanese knotweed, other weeds and amenity areas, because Monsanto declared it to be safe. As you can see from the frontispiece this document is a Requiem for bumblebees, bush crickets, beetles, moths, butterflies, hoverflies, dragonflies, damselflies, spiders, ladybirds, shield bugs and many other invertebrates that have been poisoned and probably will never return. All we have left are a few wasps, the occasional bumblebee and some water boatmen in the pond.

### **Which of the six individuals has acknowledged the receipt of our photo-journals?**

I have had three acknowledgements. The first was from the judges of the International Monsanto Tribunal that accompanied my Testimony. The second was from Geert Dancet Executive Director of European Chemical Agency. I also sent a copy of Speckled Bush Crickets to Sir David Attenborough, to whom I had sent The Year of the Bumblebee in 2011. *“Thank you...it looks as fascinating as the Bumblebee book and I am sorry indeed to know that it is, in effect, a requiem. I am ignorant about agrochemicals and I must try to discover more.”*

### **Who has not replied?**

I have had **no** acknowledgement from Bernhard Url EFSA Executive Director, Michael Flüh, Head of Pesticide Unit, Health and Consumers Directorate General (DG Sante) European Commission and Dr Mark Porter, Chairman of the British Medical Association (BMA). I can only assume that they are supporting the Agrochemical Industry and have shut their eyes and ears to anything that might shake their belief in industry data. The books that EFSA, the EU Commission and the BMA **haven’t** acknowledged they can claim in the future they never received. I also asked Michael Flüh to show the books to President Juncker (who had asked Michael Flüh to reply to my letter on his behalf) and Vytenis Andriukaitis the European Commissioner for Health. I doubt if he has done that.

In the same way that EFSA, together with the industry-funded UK Science Media Centre and Monsanto supporters, combined to viciously attack the Seralini 2-year study on rats fed GM maize and Roundup and tried to get it removed from the journal *Food & Chemical Toxicology*. Once retracted, it would have been as if the paper had never existed.

**Prof Gilles-Eric Seralini was awarded Whistleblower of the Year (a shared award) by German Scientists for his work on the toxicity of GMOs and Glyphosate**

<sup>19</sup> Renewal Assessment Report Vol 3 Annex B9. Evaluation of peer-reviewed literature regarding ecotoxicity

<sup>20</sup> <http://www.blurb.co.uk/books/1152946-speckled-bush-crickets-observations-in-a-small-nat>

<sup>21</sup> <http://www.blurb.co.uk/books/1737995-the-year-of-the-bumblebee>



Citation from German Scientists: “He was the first to publish animal test results demonstrating the toxic and carcinogenic properties of the most commonly used herbicide worldwide, the glyphosate-based “Roundup” by carrying out a two-year feeding test on rats. After the research was published, Prof Séralini was attacked by a vehement campaign by ‘interested circles’ from the chemical industry as well as the industry-financed British Science Media Centre.”

While the Editor-in-Chief of *FCT*, A. Wallace Hayes, personally took the decision to retract the Séralini study from his journal, he had strong links with Monsanto and other conflicts of interest.<sup>22</sup> However, the Séralini study was republished in another peer-reviewed journal.<sup>23</sup>

### **Chemical herbicides manufactured by the agrochemical industry have created invasive weeds; repeated applications make the weeds become resistant**

Japanese knotweed *Reynoutrie japonica* (syn. *Polygonum cuspidatum*) was introduced into Europe in the mid-16 Century by an amateur botanist from the Netherlands, Van Reynoutrie (syn. Karel van Sint Omaars).<sup>24</sup> For 500 years it caused no problems. In 1969 in the UK it was still being promoted as a plant suitable for large gardens (as was a member of the Balsam species *Impatiens glandulifera* (royalei)).<sup>25</sup> Glyphosate was introduced in 1974 and by 1981 both plants were classified in the Wildlife and Countryside Act as invasive species.<sup>26</sup> In the US, the first confirmed Glyphosate-Resistant weed, rigid ryegrass was reported in 1998 within two years of Genetically-Modified (GM) Roundup® Ready crops being grown. Super-weeds in the US in GM cropping systems are now a massive problem. Between 1996 and 2011, as a result of GM technology, 22 Glyphosate-Resistant super-weeds had developed. In 2016, Charles Benbrook says: “ Since 1974 in the U.S., over 1.6 billion kilograms of glyphosate active ingredient have been applied, or 19 % of estimated global use of glyphosate (8.6 billion kilograms). Globally, glyphosate use has risen almost 15-fold since so-called “Roundup Ready,” genetically engineered glyphosate-tolerant crops were introduced in 1996. Two-thirds of the total volume of glyphosate applied in the U.S. from 1974 to 2014 has been sprayed in just the last 10 years.”<sup>27</sup>

## **The people of Wales have been exposed to chemical contamination of the environment since WW2**

**South Wales has Japanese knotweed growing in old mining areas where the ground has been excavated: Swansea has been dubbed ‘the Japanese knotweed capital of Europe’**  
So Swansea is a testbed for the long term effects of Roundup, which is used freely in unknown and unmonitored quantities. Estate agents demand that Japanese knotweed is eradicated before a house goes on the market. The Wildlife Law Feb 2014: Control of Invasive Non-native Species gives statutory powers to the relevant body to enter land for the purposes of species control. It was impossible to obtain figures for the amount of Roundup that must have been used over many years, not just for eradicating Japanese knotweed, but for all the other urban uses that Monsanto’s: *Agronomic Benefits of*

<sup>22</sup> <http://www.gmwatch.org/news/latest-news/17121-emails-reveal-role-of-monsanto-in-seralini-study-retraction>

<sup>23</sup> <http://enveurope.springeropen.com/articles/10.1186/s12302-014-0014-5>

<sup>24</sup> Van Reynoutrie (or Karel van Sint Omaars) (1533-1569) H. Wille: The discovery of the scientific heritage of Karel van Sint Omaars (1533-1569). The Libri Picturati a 16-30 in the Jagiellon Library in Krakow. *Scientiarum Historia* 22 (1996) 2 67.

<sup>25</sup> Marshall Cavendish Illustrated Encyclopaedia of Gardening 1969.

<sup>26</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

<sup>27</sup> <http://enveurope.springeropen.com/articles/10.1186/s12302-016-0070-0>

*Glyphosate in Europe* recommends.<sup>28</sup> The document outlined at least 16 use areas (p 3) from vegetation control on land throughout agricultural production, on GM Roundup® Ready Crops and on non-agricultural land “around structures on farms, amenity and industrial areas and on railways” (p 4). The document states on page 3: “Since its discovery in the early 1970s the unique herbicidal active ingredient glyphosate has become the worlds’ most widely used herbicide because it is efficacious, economical and environmentally benign” Glyphosate has an “excellent safety profile to operators, the public and the environment.”

#### **Swansea City and County Council revealed in November 2016 “a war on weeds”**

An item from the *Swansea Leader* November 2016: “The Council has already treated 1,500 km of roadside around the city over the summer with weed-killer to keep unwanted plants at bay. And in the autumn the council treated them all over again in an effort to prevent them returning in the spring.” The applicators ignored the new rules by CRD (see next paragraph). The Council are presumably aware that Roundup is under scrutiny, so “while it is still legal” it is trying to kill as many weeds as possible before it is banned. One of our neighbours, found spraying his drive, had similar ideas about using up his tank spray in case it was banned.

#### **Chemical Regulations Directorate NEW RULES 2012 for Roundup spraying**

Streets and pavements: “From 2012 new rules from the regulator, Chemical Regulations Directorate (CRD) prohibits blanket spraying of any herbicide on non-porous hard surfaces. Targeted treatment of weeds must be undertaken on roads, pavements, concrete and paved areas and drains must not be over-sprayed.”

#### **Roundup has been sprayed blindly; no levels have ever been monitored in the UK**

In 2013 I had asked the Environment Agency to monitor glyphosate levels, sending them plenty of documented evidence of the widespread use of glyphosate and an unpublished Report from the British Geological Survey (BGS) that glyphosate and its metabolites were “emerging contaminants” that had been measured in other countries. However on 13 May 2013 I had a final tetchy response from the former Chairman of the Environment Agency: “We do therefore have to refrain from engaging in further correspondence where we have already clearly given our position and answered questions to the best of our ability.” However, a Report from the USGS in 2014: “concluded that Glyphosate and its degradation product AMPA occur frequently and widely in U.S. soils, surface water, groundwater, and precipitation.”<sup>29</sup>

#### **Pesticide drift is the aerial movement and unintentional deposit of pesticide outside the target area:<sup>30</sup> it results in heavy contamination of people and the environment**

So when Roundup is sprayed, the particles drift in the air, are blown by the wind and come down in the rain. Swansea is wet and windy: from January 1<sup>st</sup> 2016 to November 29<sup>th</sup> 1,417 mm (about 56 inches) of rain were recorded.

“There are two forms of pesticide drift. **Particle drift** is the movement of pesticide droplets or solid particles outside the area being treated. Coarser droplets move short distances and fall close to the point of release. Finer particles (i.e. less than 200 microns) can remain suspended on air currents for long periods of time and can be carried far outside of the target area. For example, a 100 micron droplet takes 11 seconds to fall three metres in still air, and will drift more than 20 metres in an 8 km/h wind. **Vapour drift** is the movement of pesticide vapours outside the area being treated. Vapour drift is invisible and can have a considerable impact

<sup>28</sup> <http://www.monsanto.com/products/Documents/glyphosate-background-materials/Agronomic%20benefits%20of%20glyphosate%20in%20Europe.pdf>

<sup>29</sup> <http://onlinelibrary.wiley.com/doi/10.1111/jawr.2014.50.issue-2/issuetoc>

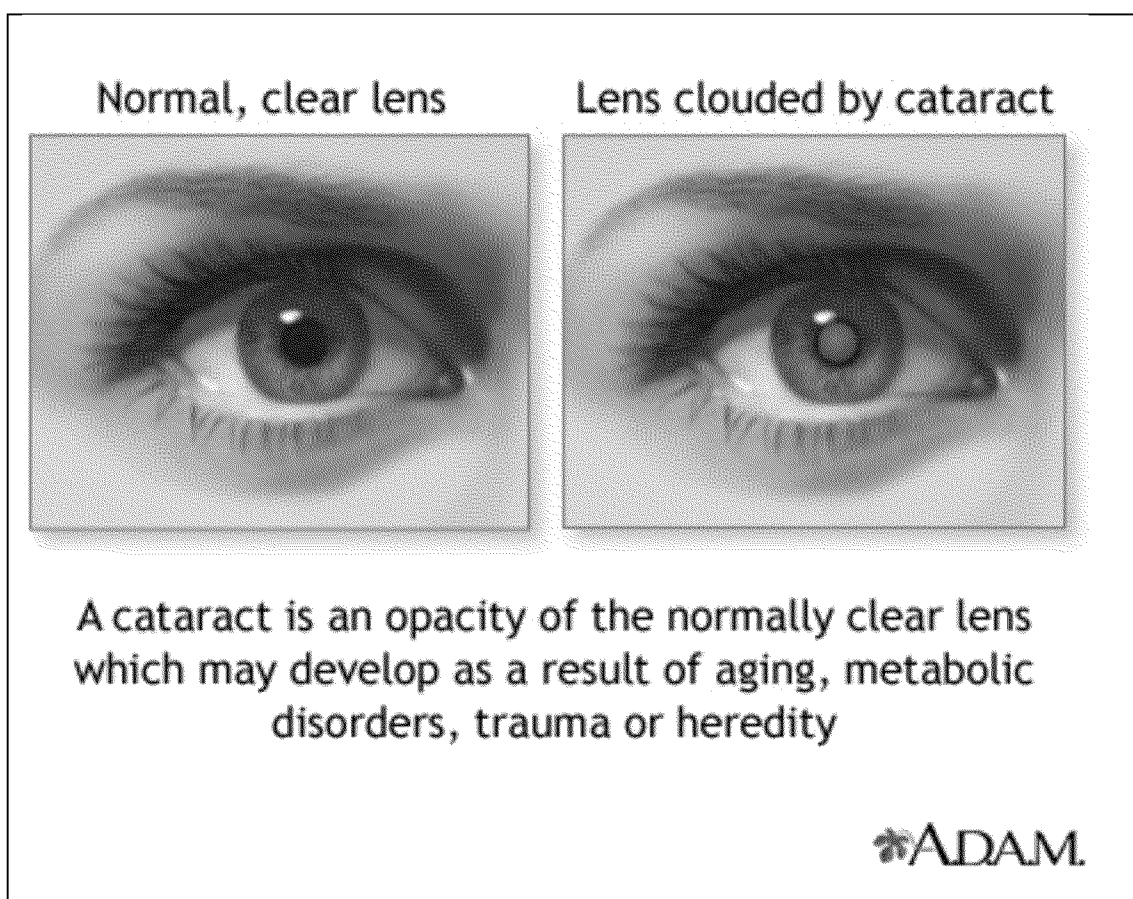
<sup>30</sup> <http://www.omafra.gov.on.ca/english/crops/facts/11-001.htm>

*Vapours are created when spray droplets evaporate both at the time of application and for some time after the spray has dried on plant or soil surfaces. The potential for vapour drift is more a product of the volatility of the active ingredient, the formulation (e.g. esters) and environmental conditions (e.g. hot and dry) than the equipment used."*

Glyphosate is an endocrine and nervous system disruptor (ENDs) acts at extremely low levels, of the order of parts per trillion (ppt).

### **One of Monsanto's secret studies showed glyphosate caused cataracts and eye damage<sup>31</sup>**

During the time in 2016 when Roundup had been sprayed on 3,000 km roads Swansea became a hotspot for the sudden development of cataracts and macular degeneration



Samsel and Seneff wrote paper IV on Glyphosate: Glyphosate, pathways to modern diseases IV: cancer and related pathologies<sup>32</sup> and concluded that: *"significant evidence of tumours was found during these investigations"*. In this paper Table 11 Page 127 shows the distribution and bioaccumulation of <sup>14</sup>C labelled glyphosate in blood, bone, organs and other tissues of Sprague Dawley rats. The eye is included in this list. The results of the Cataract study is shown on page 126 Table 9.

<sup>31</sup> Stout, L.D. & Ruecker, F.A. Chronic study of glyphosate administered in feed to albino rats. Unpublished Study, Project No. MSL-10495. Monsanto Agricultural Company (2,175 pp.) EPA MRID 416438-01 (26 September 1990)

<sup>32</sup>

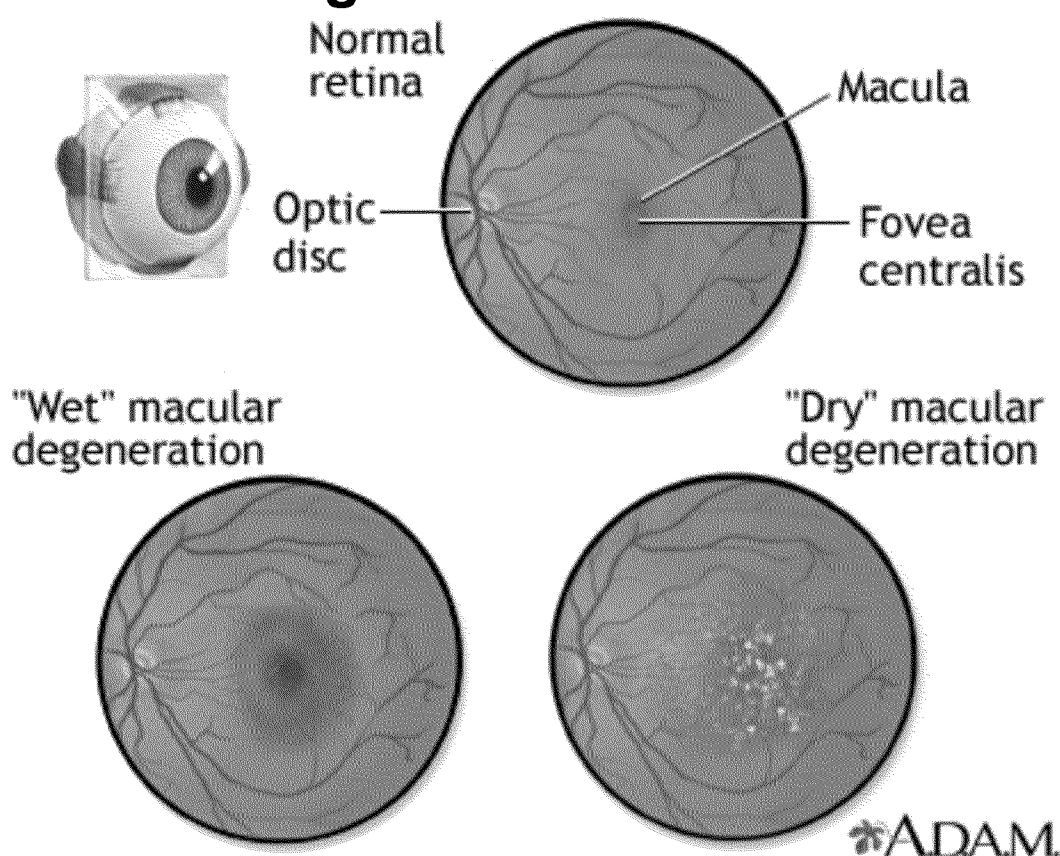
[https://www.academia.edu/17751562/Glyphosate\\_pathways\\_to\\_modern\\_diseases\\_IV\\_cancer\\_and\\_related\\_pathologies](https://www.academia.edu/17751562/Glyphosate_pathways_to_modern_diseases_IV_cancer_and_related_pathologies)

A Monsanto scientist had claimed that glyphosate didn't accumulate but was excreted unchanged from the body<sup>33</sup> and referred to the glyphosate re-assessment in Europe in 2002. However, Monsanto's secret studies revealed otherwise.

**The increase in cataracts has been confirmed by epidemiological studies in England and by a 2016 WHO Report**

Annual rates of admission for cataract surgery in England rose 10-fold from 1968 to 2004: from 62 episodes per 100,000 population in 1968 to 637 in 2004.<sup>34</sup> A 2016 study by the WHO also confirmed that the incidence of cataracts had greatly increased.<sup>35</sup> 'A global assessment of the burden of disease from environmental risks' it says that cataracts are the leading cause of blindness worldwide. Globally, cataracts are responsible for 51% of blindness— an estimated 20 million individuals suffer from this degenerative eye disease.

## Macular degeneration



**Macular degeneration is also predicted to increase**

By 2050, the estimated number of people with AMD is expected to more than double from 2.07 million to 5.44 million. White Americans will continue to account for the majority of cases. However, Hispanics will see the greatest rate of increase, with a nearly six-fold rise in the number of expected cases from 2010 to 2050.<sup>36</sup>

<sup>33</sup> <https://gmoanswers.com/ask/hi-does-senior-monsanto-scientist-dan-goldstein-still-maintain-if-ingested-glyphosate-excreted>

<sup>34</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955650/>

<sup>35</sup> [http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf)

<sup>36</sup> <https://nei.nih.gov/eyedata/amd>

## How chemicals have destroyed biodiversity in the UK since WW2

### The history of agriculture in Britain assisted by industry

The fate of the British people was sealed as long ago as 1843 when a philanthropist and a chemist got together to found Rothamsted Research station.<sup>37</sup> The ties with the US Department of Agriculture came during WW2 when together they discovered the very first herbicide, 2,4-D (2,4-dichlorophenoxyacetic acid) that could kill unwanted vegetation.

### The Pesticide Conspiracy: even in the 1970s the Agricultural Industry was given massive power by the British Government

Robert van den Bosch, writing in 1978 in *The Pesticide Conspiracy*:<sup>38</sup> "If one considers how dangerous these chemicals are, one would suppose that it would be Government policy to minimize their use by every possible means. However the Royal Commission on Environmental Pollution notes, *'there is... no such policy in the UK, nor does the possible need for it appear to have been considered, notwithstanding the great increases in the use of these chemicals.'*"

The Agrochemical Industry, on the contrary, seems to be under the impression it is Government policy to encourage the maximum use of pesticides. Thus according to the Agrochemical industry, of 367,000 acres of potatoes grown in this country in 1976, 310,000 acres are treated with herbicides, 114,000 acres with granular insecticides and nematocides, 218,000 acres with foliar insecticides and 265,000 acres with fungicides.<sup>39</sup> In this way one acre of potatoes, the industry boasts, can be treated from 2-11 times with different pesticides." Van den Bosch also condemns the UK for aerial spraying. *"What is particularly shameful in this country is the prevalence of aerial spraying. One million acres of agricultural land are sprayed each year, which involves 34,000 flights. Controls on this practice are practically non-existent...nor as the Royal Commission points out, does there appear to be any controls on the type of spraying equipment."* and the Royal Commission created under Royal Warrant in 1970, was closed down in 2011 as part of the Coalition Government's spending cuts. Britain still uses aerial spraying as derogation from the EU recommendations.

### The UK rejected almost all of the advice on Sustainable Use of Pesticides 21 October 2009: DIRECTIVE 2009/128/EC OF THE EUROPEAN PARLIAMENT<sup>40</sup>

#### Article 9 Aerial spraying

EU Directive Advice: Aerial spraying of pesticides has the potential to cause significant adverse impacts on human health and the environment, in particular from spray drift. Therefore aerial spraying should generally be prohibited with derogations possible where it represents clear advantages in terms of reduced impacts on human health and the environment in comparison with other spraying methods, or where there are no viable alternatives, provided that the best available technology to reduce drift is used.

UK Government Response: We do not consider that responsible application of pesticides by aerial spraying poses an unacceptable risk to human health and the environment, and consequently we will use the derogation. We believe that the existing legislation control regime provides a basis for meeting the Directive and this will be adapted to ensure the continuation of properly regulated aerial applications through a consent-based approach.

<sup>37</sup> <http://www.rothamsted.ac.uk/about>

<sup>38</sup> Van den Bosch, R. *The Pesticide Conspiracy*: USA Doubleday & Company (1978); Dorchester, UK: Prism Press (1980).

<sup>39</sup> Industry's Statistics: British Agrochemical Association London 1976

<sup>40</sup> <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32009L0128>

The Government has continued to allow aerial spraying: Pesticide Usage Survey Report 250 Arable Crops in the United Kingdom 2012 (Including Aerial Applications 2012)<sup>41</sup>

#### Article 10 Protection of water

EU Directive Advice: The aquatic environment is especially sensitive to pesticides. It is very necessary for particular attention to be paid to avoiding pollution of surface water and groundwater by taking appropriate measures such as the establishment of buffer and safeguard zones, or planting hedges along surface water to reduce exposure of water bodies to spray drift, drain flow and run-off. The dimensions of buffer zones should depend in particular pesticide properties, as well as agricultural characteristics of the areas concerned.

Government Response: Current statutory and voluntary controls related to pesticides and the protection of water, if followed, afford a high degree of protection to water courses and cover specific measures detailed in the Directive. The Government will primarily seek to work with the pesticides industry to enhance voluntary measures.

#### Article 11 Use of pesticides in specific areas

EU Directive Advice: Use of pesticides can be particularly dangerous in very sensitive areas such as Natura 2000 sites protected in accordance with Directives 79/409/EEC and 92/43/EEC. In other places such as public parks and garden, sports and recreation grounds, school grounds and children's playgrounds, and in the close vicinity of healthcare facilities, the risks from exposure to pesticides is high. In these areas, the use of pesticides should be minimised or prohibited. When pesticides are used, appropriate risk management measures should be established and low-risk pesticides as well as biological control measures should be considered in the first place.

Government Response: We do not consider it necessary to prohibit the use of pesticides in public spaces or conservation areas or to impose new statutory controls on pesticide use in these areas.

We believe that the UK can meet its obligations under the Directive through existing statutory and voluntary controls and develop additional voluntary measures.

#### Plant Protection Products Regulation (PPP) (EC) No 1107/2009)

The consultation sought views on whether and how specific provisions in the PPP Regulation should be implemented in the UK.

Article 31 included an optional provision that could allow future product authorisation to include obligation to provide advance notice to any neighbours who could be exposed to the spray drift and who have requested to be informed. The British Medical Association with regard to Article 31, wanted advance notification, so that vulnerable patients, such as those suffering from respiratory problems, may be alerted in advance of spraying.

Government Response: We do not believe that it is appropriate to introduce a statutory requirement for operators to give advanced notice of planned spray operations to members of the public living adjacent to sprayed land. We will continue to encourage farmers and spray operators to develop good relations with their neighbours

#### **Georgina Downs<sup>42</sup> has been campaigning since 2001 on behalf of rural communities against crop spraying**

She says: *"The reality of crop spraying in the countryside is not merely related to exposure to one individual pesticide or to one single group of pesticides, as agricultural pesticides are rarely used individually but commonly sprayed in mixtures (cocktails) -- quite often a mixture will consist of 4 or 5 different products. Each product formulation in itself can contain a*

<sup>41</sup> <https://secure.fera.defra.gov.uk/pusstats/surveys/documents/arable2012.pdf>

<sup>42</sup> <http://www.pesticidescampaign.co.uk>

*number of different active ingredients, as well as other chemicals, such as solvents, surfactants and co-formulants (some of which can have adverse effects in their own right, before considering any potential synergistic effects in a mixture(s)). Studies have shown mixtures of pesticides (and/or other chemicals) can have synergistic effects.*

#### **Food and Environment Research Agency (FERA) survey of pesticides 1988 to 2014**

These indicate that pesticide residues on British food are increasing annually. A survey of pesticide (active substances) usage on Oil Seed Rape (OSR) 1988-2014 showed that the number of active substances applied had increased from 5 in 1988 to 15 in 2014 (Fig 1) and the number of treatments had increased from 5 in 1988 to 12 in 2014. (Fig 2) In 2014, herbicides were used on 98.4% OSR and seed treatments on 95.8%.

In 2014 glyphosate was used on Wheat (601,330 kg) Winter barley, Spring barley, Oats, Rye, Triticale, Oilseed rape (577,969 kg), Linseed, All potatoes, Peas, Beans, Sugar beet, with a total of 1,765,465 kg glyphosate on all crops. The total weight of pesticides (herbicides and desiccants, fungicides, growth regulators, molluscicides and repellants, insecticides and seed treatments) applied to farmland in 2014 was in excess of 16,000 tonnes.

**Figure: Pesticides - active substances**

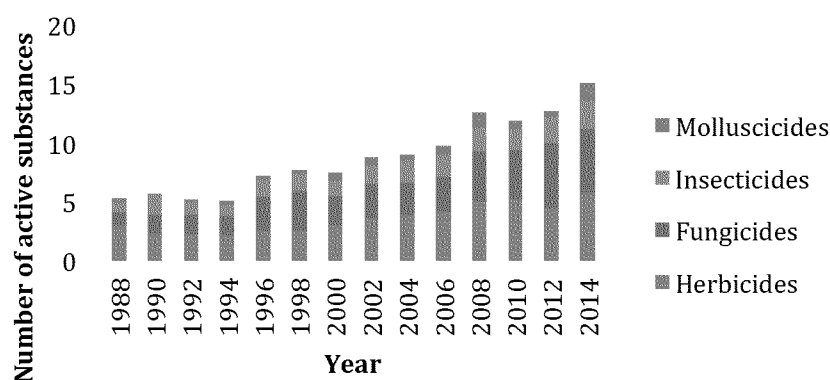


Fig. 1 PESTICIDES: Number of active substances used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeeper's Spray Liaison Officer. Figures supplied by FERA

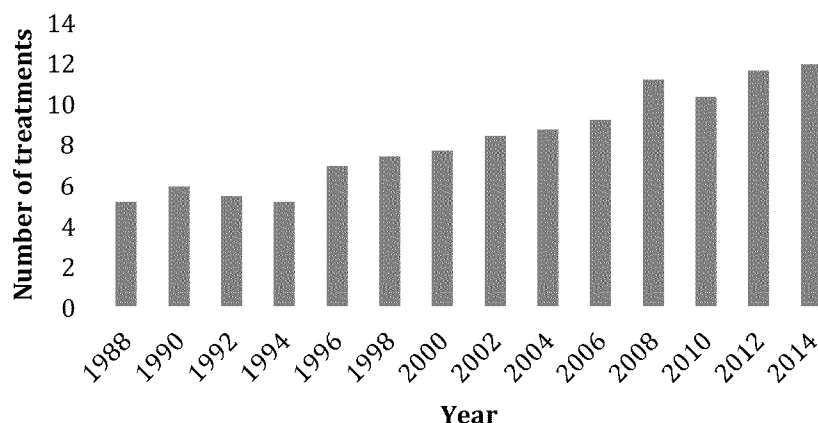
**Figure: Pesticides - times treated**

Fig. 2 PESTICIDES TIMES TREATED: used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeepers Spray Liaison Officer. Figures supplied by FERA

#### **Pesticide usage statistics show massive increase in glyphosate between 2012 and 2014**

Fera statistics showed that in 2012 the area treated by glyphosate was 1,750,000 ha. This had increased in 2014 to 2,250,000 ha. Guy Gagen, Chief Arable Adviser for the NFU, said increased glyphosate use (up one third since 2012, to an area the size of Wales) was probably due to treatment of 'black grass.'<sup>43</sup> Black grass is a glyphosate-resistant super-weed just like Japanese knotweed. Herbicide resistant black grass, first seen in 1982 (two years after farmers started spraying glyphosate pre-harvest) and is now found on 16,000 farms in 34 counties. Gagen said that spraying wheat could result in traces of glyphosate ending up in bread sold in supermarkets but the amount was well below the maximum residue level set by the EU. A Defra spokesman said: *"There are extensive regulations in place so that people and the environment are protected from pesticides. The approval of glyphosate for use across Europe is being reviewed by the EU Commission."*

#### **The State of Nature Report 2016<sup>44</sup>**

Mark Eaton of the RSPB, the Report's first author said: *"The report includes a new 'biodiversity intactness index', which analyses the loss of species over centuries. The UK has lost significantly more nature over the long term than the global average with the UK the 29th lowest out of 218 countries. 'It is quite shocking where we stand compared to the rest of the world, even compared to other western European countries: France and Germany are quite a way above us in the rankings,' said Eaton. 'The index gives an idea of where we have got to over the centuries, and we are pretty knackered.'"*

#### **Complete denial that farming was responsible**

It was therefore astounding to hear the complete denial of the NFU and Defra about The State of Nature Report. NFU vice-president Guy Smith said *"intensification of farming had ended in the early 1990s."* that farmers *"were using less fertiliser and pesticides than ever"* and a spokeswoman from Defra said: *"Protecting our precious environment and supporting our world-leading farmers, a cornerstone of our economy, will form an important part of our*

<sup>43</sup> <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

<sup>44</sup> [http://www.rspb.org.uk/Images/State%20of%20Nature%20UK%20report\\_%2020%20Sept\\_tcm9-424984.pdf](http://www.rspb.org.uk/Images/State%20of%20Nature%20UK%20report_%2020%20Sept_tcm9-424984.pdf)



EU exit negotiations.” The statistics for pesticide usage produced by Fera show exactly the opposite. Isn't Defra supposed to be advising the UK Government ?

### **Results are out for species that have declined in summer 2016 compared with 2015**

From the Butterfly Conservation Trust Big Butterfly Count<sup>45</sup> *“It was a pretty good summer, with above average temperatures and yet butterflies on the whole fared badly. Over half of the big butterfly count target species decreased in 2016 compared with the previous year. The 'blues' did badly, with Small Copper recording its lowest numbers since the big butterfly count began and both Common Blue and Holly Blue halved in numbers compared with summer 2015. This was particularly disappointing for Holly Blue, which had an excellent 2015 and numbers in spring 2016 also appeared high. The stunning Peacock, with its beautiful 'eye-spot' wing markings that can scare off would-be predators such as Blue Tits, decreased for the third summer in a row. Its numbers have now dropped from an average of 3.6 individuals per count in 2013 to just 0.5 per count in 2016, a sixfold decrease over three years. Small Tortoiseshell numbers were down once again too, falling by 47% from 2015 levels, and even the Comma, one of the butterfly success stories of the past few decades, suffered a poor summer. Its numbers were down 46% year on year, resulting in its lowest abundance in the seven years of big butterfly count. It was all change at the top of the big butterfly count chart in 2016, with Gatekeeper, the most abundant species in 2015's count, suffering a 40% decrease and finishing in fourth place. An average of just 1.5 Gatekeepers seen per count in 2016 was the lowest abundance of this species since big butterfly count began.”*

Toads *“Toad numbers have fallen by more than two-thirds in 30 years, according to a study using data from volunteer patrols set up to help the amphibians cross roads.”*<sup>46</sup>

This deterioration in butterfly numbers 2016 has some resemblance to the state of our Nature Reserve

### **Biodiversity Intactness Index correlates with pesticide usage**

This is a link to an animated pictorial representation but it is not easily findable.<sup>47</sup>

*“Of 218 countries assessed, the UK is ranked 189: it is 29<sup>th</sup> lowest out of 218: Countries below are the Republic of Ireland, USA, Hong Kong and Macao. This means that nature is faring worse in the UK than in most other countries.*

*UK 165 species are considered critically endangered and likely to go extinct.*

*England 109 species are critically endangered and likely to go extinct.*

*Scotland 65 species are critically endangered and are likely to go extinct.*

*Northern Ireland 45 species are critically endangered and likely to go extinct.*

*Wales 41 species are critically endangered and likely to go extinct.”*

Around 75% of the UK is managed for food production. How we manage that land is key to the state of Nature.

### **The USDA and the USDA ARS (Agricultural Research Service) are allowing Monsanto and DuPont's GM crops to produce biological deserts – surely they must have noticed?**

Craig Childs confirms it in his book Apocalyptic Planet: Field Guide to the Future of the

<sup>45</sup>

[http://www.bigbutterflycount.org/2016mainresults?utm\\_source=Butterfly%20Conservation&utm\\_medium=email&utm\\_campaign=7591230\\_October%202016&utm\\_content=BBC%20results&utm\\_i=DGT,4IPFI,KNFC3B,GQ32W,1](http://www.bigbutterflycount.org/2016mainresults?utm_source=Butterfly%20Conservation&utm_medium=email&utm_campaign=7591230_October%202016&utm_content=BBC%20results&utm_i=DGT,4IPFI,KNFC3B,GQ32W,1)

<sup>46</sup> <https://www.theguardian.com/environment/2016/oct/06/uk-common-toad-numbers-down-two-thirds-in-30-years>

<sup>47</sup> <https://www2.rspb.org.uk/whatwedo/stateofnature2016>

Earth.<sup>48</sup> The State of Iowa was just one area in which the US Geological Survey reported widespread contamination of soil, air, rainwater and river water with glyphosate and its longer-acting metabolite AMPA ( $\alpha$ -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid).<sup>49</sup> Grundy County Iowa was where Craig Childs spent a long weekend in a monoculture of GM "Roundup® Ready" corn looking for wildlife. *"I listened and heard nothing, no bird, no click of insect. Mr Owen was the farmer who had given us permission to backpack across his cornfields. He grew a combination of DuPont and Monsanto stock. We were in DuPont now. It didn't look any different to me."*

Robert Krulwich blog:<sup>50</sup>

*Corn farmers champion corn. Anything that might eat corn, hurt corn, bother corn, is killed. Their corn is bred to fight pests. The ground is sprayed. The stalks are sprayed again. So, Craig wondered, "What will I find?" The answer amazed me. He found almost nothing. There were no bees. The air, the ground, seemed vacant. He found one ant "so small you couldn't pin it to a specimen board." A little later, crawling to a different row, he found one mushroom, "the size of an apple seed." Then, later, a cobweb spider eating a crane fly (only one). A single red mite "the size of a dust mote hurrying across the barren earth," some grasshoppers, and that's it." Though he crawled and crawled, he found nothing else. "It felt like another planet entirely," he said, a world denuded.*

**One hundred years ago there was a rich biodiversity of species in the US; now it has gone** Krulwich continues: *"Yet, 100 years ago, these same fields, these prairies, were home to 300 species of plants, 60 mammals, 300 birds, hundreds and hundreds of insects. This soil was the richest, the loamiest in the state. And now, in these patches, there is almost literally nothing but one kind of living thing. We've erased everything else. We need to feed our planet, of course. But we also need the tiny creatures that drive all life on earth. There's something strange about a farm that intentionally creates a biological desert to produce food for one species: us. It's efficient, yes. But it's so efficient that the ants are missing, the bees are missing, and even the birds stay away. Something's not right here. Our cornfields are too quiet."*

**The International Criminal Court in The Hague is extending its remit to include ecocide<sup>51</sup>** The UN-backed court, which sits in The Hague, has mostly ruled on cases of genocide and war crimes since it was set up in 2002. It has been criticized for its reluctance to investigate major environmental and cultural crimes, which often happen in peacetime. In a change of focus, the ICC said on Thursday it would also prioritize crimes that result in the "destruction of the environment", "exploitation of natural resources" and the "illegal dispossession" of land. It also included an explicit reference to 'land-grabbing'. Environmental destruction and land-grabs could lead to governments and individuals being prosecuted for crimes against humanity by the international criminal court.<sup>52</sup>

## **Pesticides cause cancers but the agrochemical industry denies it**

**Is the NFU aware that farmers, their families and rural communities are most affected by**

<sup>48</sup> <http://houseofrain.com/bookdetail.cfm?id=1344621970977>

<sup>49</sup> <http://onlinelibrary.wiley.com/doi/10.1111/jawr.12159/abstract>

<sup>50</sup> <http://www.npr.org/sections/krulwich/2012/11/29/166156242/cornstalks-everywhere-but-nothing-else-not-even-a-bee>

<sup>51</sup> <https://www.theguardian.com/global/2016/sep/15/hague-court-widens-remit-to-include-environmental-destruction-cases>

<sup>52</sup> <https://www.icc-cpi.int/Pages/item.aspx?name=pr1238>

### the toxic effects of pesticides?

CHEM Trust published a Report in 2010:<sup>53</sup> **A Review of the Role Pesticides Play in Some Cancers: Children, Farmers and Pesticide Users at Risk?** *“Studies of death registries in some parts of the world suggest that farmers and agricultural workers are more likely than the general population to die from several cancers including NHL, leukaemia, multiple myeloma, prostate cancer, Hodgkin’s disease, pancreatic cancer and brain cancer. Some studies strongly indicate an association between pesticide exposure and NHL, leukaemia and prostate cancer.”*

### Cancer Research UK: Chairman of Cancer Research UK works for the Agrochemical Industry

Michael Pragnell, Chairman of Cancer Research UK was founder of Syngenta and former Chairman of CropLife International. It was formed in 2001 from BASF, Bayer, Dow, DuPont, FMC Corp, Monsanto, Sumitomo and Syngenta. The CRUK website says that there is no convincing evidence that pesticides cause cancer. CRUK links cancer to alcohol and obesity. Syngenta is a member of the **European Glyphosate Task Force (GTF)**, a consortium of companies joining resources and efforts in order to renew the **European glyphosate** registration with a joint submission, and of International Life Sciences Institute (ILSI). ILSI represents Global Corporations (including the six Agrochemical Giants) with massive resources that are seeking to control the world’s food supply. ILSI is an industry organisation based in Washington, DC, USA. It claims to be *“a non-profit, worldwide organization whose mission is to provide science that improves human health and well-being and safeguards the environment”* and allegedly has charity status.

### A red-herring manufactured by industry in Britain: alcohol is claimed to be linked with seven forms of cancer: this ‘alleged fact’ is endlessly reinforced by the UK media until people in the UK are brainwashed

An article was published in the *British Medical Journal* on 9 April 2016<sup>54</sup> reporting a survey commissioned by **Cancer Research UK** ‘People lack awareness of link between alcohol and cancer.’ The Report produced by researchers at the University of Sheffield ‘comes ahead of the consultation closing on how well new drinking guidelines proposed by the UK’s Chief Medical Officer in January 2016, are communicated.’<sup>55</sup>

*“Almost 90 per cent of people in England don’t associate drinking alcohol with an increased risk of cancer”* Alison Cox, **Cancer Research UK’s** Director of Cancer Prevention. She said: *“The link between alcohol and cancer is now well established, and it’s not just heavy drinkers who are at risk. Drinking alcohol is linked to an increased risk of seven different cancers- liver, breast, bowel, mouth, throat, oesophageal (food pipe), laryngeal (voice box)- but when people were asked “which, if any, health conditions do you think can result from drinking too much alcohol?” just 13 per cent of adults mentioned cancer.* Dr Penny Buykx, a senior research fellow at The University of Sheffield and lead-author of the report, said: *“We’ve shown that public awareness of the increased cancer risk from drinking alcohol remains worryingly low. People link drinking and liver cancer, but most still don’t realise that cancers including breast cancer, mouth and throat cancers and bowel cancer are also linked with alcohol, and that risks for some cancers go up even by drinking a small amount.”*

### The citizens of Swansea are sick; with cancers, neurological diseases and cataracts, just as Monsanto found in long-term studies before it gained illegal registration by the US EPA

<sup>53</sup> <http://www.chemtrust.org.uk/wp-content/uploads/CHEM-Trust-Report-Pesticides-Cancer-July-2010.pdf>

<sup>54</sup> <http://www.bmj.com/content/353/bmj.i1881>

<sup>55</sup> <http://www.cancerresearchuk.org/about-us/cancer-news/press-release/2016-04-01-9-in-10-dont-link-alcohol-and-cancer>

There are cancer hotspots in the surrounding villages where Roundup has been sprayed. Over the last few years people in the area have been treated for (or have died from) numerous diseases: brain tumours (mostly glioblastomas), cancers of the breast, ovary, prostate, lung (more than half of which were in non-smokers), oesophagus, colon, pancreas, rectum, kidney, melanoma, osteosarcoma, non-Hodgkin lymphoma (NHL), uterine carcinoma, leiomyosarcoma of the uterus, multiple myeloma, Parkinson's, Multiple sclerosis, Motor-neurone Disease and Alzheimer's/Dementia. Many of the cancers are aggressive and unusual; they resemble the cancers that were seen in factory workers in the pesticides industry in the 1960s. Had I detailed the many cancers affecting people in our area at the beginning of my campaign, I would have been accused of being 'anecdotal.' But if we link these cancers to the total disappearance of wildlife from our nature reserve and the sudden diagnosis of cataracts and/or macular degeneration amongst this group of people after intense application of Roundup to 3,000 km of city roads during the summer and autumn 2016, we have a perfect storm.

## **The Battle in Europe over Endocrine Disrupting Chemicals (EDCs)**

### **Theo Colborn's crucial research in the early 1990s into the chemicals that were changing humans and the environment was ignored**

The late Theo Colborn<sup>56</sup> (1927-1914) was the first to research and write about EDCs, man-made chemicals that became widespread in the environment after WW II. In a book published in 1996, Our Stolen Future: How Man-made Chemicals are Threatening our Fertility, Intelligence and Survival, Colborn, Dumanoski and Peters revealed the full horror of what was happening to the world as a result of contamination with EDCs.<sup>57</sup> There was emerging scientific research about how a wide range of man-made chemicals disrupt delicate hormone systems in humans. These systems play a critical role in processes ranging from human sexual development to behaviour, intelligence, and the functioning of the immune system. At that stage, polychlorinated biphenyls (PCBs), pesticides DDT, chlordane, lindane, aldrin, dieldrin, endrin, toxaphene, heptachlor, dioxin, atrazine and dacthal were identified as EDCs. Colborn illustrates the problem by constructing a diagram (page 105) of the journey of a PCB molecule from a factory in Alabama into a polar bear in the Arctic. Colborn says: *"The concentration of persistent chemicals can be magnified millions of times as they travel to the ends of the earth...Many chemicals that threaten the next generation have found their way into our bodies. There is no safe, uncontaminated place."*

### **Estimating Burden and Disease Costs of Exposure to Endocrine-Disrupting Chemicals in the European Union<sup>58</sup>**

*Rapidly increasing evidence has documented that endocrine-disrupting chemicals (EDCs) contribute substantially to disease and disability. Expert panels achieved consensus at least for probable (>20%) EDC causation for IQ loss and associated intellectual disability, autism, attention-deficit hyperactivity disorder, childhood obesity, adult obesity, adult diabetes, cryptorchidism, male infertility, and mortality associated with reduced testosterone. Conclusions: EDC exposures in the EU are likely to contribute substantially to disease and dysfunction across the life course with costs in the hundreds of billions of Euros per year. These estimates represent only those EDCs with the highest probability of causation; a broader analysis would have produced greater estimates of burden of disease and costs."*

<sup>56</sup> <http://endocrinedisruption.org/about-tedx/theo-colborn>

<sup>57</sup> *Our Stolen Future: How Man-made Chemicals are Threatening our Fertility, Intelligence and Survival*: Colborn, Myers and Dumanoski: Little, Brown and Company, New York. 1996.

<sup>58</sup> <http://dx.doi.org/10.1210/jc.2014-4324>

**Professor Séralini, who has studied glyphosate for 30 years, says that Roundup is an endocrine disruptor and a nervous system disruptor (ENDs).<sup>59</sup>**

*“Abstract: Roundup and other glyphosate-based herbicides are the most widely used pesticides in the world; their residues are among the main pollutants in surface waters. Their use has increased through the spraying of 80% of edible agricultural GMOs, which also contain high levels of their residues. They are composed of glyphosate (35 –40% in general) and adjuvants that are around 1,000 times more toxic than glyphosate alone, and are also endocrine disruptors below toxic thresholds. All endocrine disruptors (ED) are also nervous system disruptors (ND), because they act as “spam” for cell–cell communication, in the sense that they are spurious messages (or molecules) sent to a group of organisms or cells, impeding and slowing down, and in some cases accelerating, the physiological communication system. Therefore, they should be called ENDs (endocrine and nervous system disruptors). From 0.1 ppb in chronic tests in vivo, Roundup is highly tumorigenic, provoking hormone-dependent tumours, other hormonal imbalances, and important liver and kidney toxicities. Pesticide adjuvants play the same role in other pesticide formulations. The declared active principles often appear to be by far the least toxic compounds after water in formulations. Unfortunately for public health, they are the only substances tested by companies for regulatory purposes over the long term in vivo. Thus, the acceptable daily intakes deduced from these tests are 1000–10 000 times too high. In regulatory tests the deleterious effects in rats are compared with historical data on rat pathologies. Analysis of laboratory rodent feeds sourced from five continents reveals that they are so contaminated by pollutants that comparison to these hence inappropriate controls generally masks the chronic pathologies provoked by the pesticides and other chemicals tested. The disputes with industry representatives and lobby groups that arose in the course of this research are also summarized in this short review. Finally, potential methods of improving transparency and advancing scientific knowledge are recommended.”*

#### **Endocrine Disrupting Chemicals (EDC) – 2012 Commissioned by WHO and UNEP**

An assessment of the State of Science of Endocrine Disruptors was prepared for the United Nations Environment Program and the World Health Organization by a group of approximately 50 expert scientists led by Professor Åke Bergman, University of Stockholm.<sup>60</sup> The authors outlined the current evidence of: 1) a high incidence, and increasing trends, of many endocrine-related disorders in humans; 2) observations of endocrine-related effects in wildlife populations; 3) identification of chemicals with endocrine disrupting properties linked to disease outcomes in laboratory studies.

*“Endocrine-related disorders in humans are manifest by:*

- ∞ *Increases in low semen quality in young men (up to 40%)*
- ∞ *Incidence of genital malformations has increased over time*
- ∞ *Adverse pregnancy outcomes and birth defects has increased in many countries*
- ∞ *Neurobehavioural disorders related to thyroid dysfunction has increased*
- ∞ *Endocrine-related cancers (breast, endometrial, ovary, prostate, testicular and thyroid cancers) have been increasing over the past 40–50 years*
- ∞ *Earlier onset of breast development in young girls which leads to breast cancer*
- ∞ *The prevalence of obesity and type 2 diabetes is increasing. The WHO estimates that 1.5 billion adults worldwide are overweight or obese and that the number with type 2 diabetes increased from 153 million to 347 million between 1980 and 2008”*

<sup>59</sup> <http://www.amsi.ge/jbpc/31515/15-3-abs-3.htm>

<sup>60</sup> [http://unep.org/pdf/9789241505031\\_eng.pdf](http://unep.org/pdf/9789241505031_eng.pdf)

The conclusion was, as usual, delaying tactics: *“It is essential to evaluate associations between EDC exposures and health outcomes by further developing methods for which proof of concept is currently under development.”* An Editorial in *The Lancet* concluded: *“there is currently no widely agreed system for assessing the strength of associations between exposure to chemicals (including EDCs) and adverse health outcomes.”*

**Corporate Europe Observatory and Stéphane Horel Report: A Toxic Affair: How the Chemical Lobby Blocked Action on Endocrine Disrupting Chemicals<sup>61</sup>**

Page 2: *“This report tells the story of how a major EU public health initiative was effectively obstructed by corporate lobby groups in tandem with actors within the European Commission. It shows how industry has successfully used some classic tactics of corporate lobbying. This report shows that some civil servants, even though employed in the services in charge of public health in the European Union, seem to have served corporate interests over public ones.”*

Page 3: *“Human exposure to endocrine disrupting chemicals (EDCs) has been linked to diseases such as infertility, cancer and obesity. The medial cost of this serious public health issue has been recently estimated at €157 billion a year in the EU alone<sup>62</sup>*

Page 6: *Endocrine disrupting chemicals (EDCs) can interfere with the hormonal systems of mammals, fish, frogs, and other types of living organisms. Their toxicity only started to be fully acknowledged by scientists in the early 1990s. EDCs have the ability to mimic, block, or alter the levels of hormones such as oestrogens, testosterone, or thyroid hormones whose actions affect many functions of the body. Exposure to these chemicals in the early developmental stages of an organism can cause irreversible effects that will only become evident later in life. There is a high probability that EDCs play a role in the genesis of many ‘modern’ diseases such as prostate, breast, and testicular cancers, infertility, genital abnormalities, brain development, diabetes, and obesity.*

Page 7: *Brussels nowadays is the second capital of corporate lobbying in the world— after Washington DC. An estimated 20,000-30,000 lobbyists populate the EU quarter, the large majority of whom represents corporations. All big corporations have their own lobby offices and in-house lobbyists.*

Page 8: *Lobby groups often employ the classic tactic of the ‘revolving door’: in other words, to hire people who come straight from a job in government. Many lobbyists are former Commission officials or Members of the European Parliament, or Parliament or Council staff. They are therefore in a good position to then lobby their former colleagues, and they know how the system works from the inside. The revolving doors can also spin in the other direction, that is, when someone from within the industry moves to a key position in a public authority.*

Page 13 there are examples of lobbying emails sent by industry to various targets in the European Commission.

**The USDA made a submission to Europe on endocrine disruptors.<sup>63</sup>**

They identified Public Health, Environmental Protection and Climate Change, Food Security, Consumer Welfare, Trade and Jobs.

Conclusion: U.S. stakeholder analysis suggests the failure to adopt a scientific approach could impact €65.3 billion worth of imports into the EU (of which over €4 billion worth would be U.S. exports). The United States Government fully supports measures to protect public health and the environment. We urge the Commission to take the U.S. comments into

<sup>61</sup> [http://corporateeurope.org/sites/default/files/toxic\\_lobby\\_edc.pdf](http://corporateeurope.org/sites/default/files/toxic_lobby_edc.pdf)

<sup>62</sup> <http://dx.doi.org/10.1210/jc.2014-4324>

<sup>63</sup> <http://www.usda-eu.org/wp-content/uploads/2015/01/United-States-Submission-Endocrine-Disrupters-2015-01-20.pdf>

*account and to adopt an approach that fully considers the vital role that pesticide chemicals play in food safety and security, while promoting strong levels of protection, inspiring public confidence, and avoiding unwarranted burdens. Such consideration is critical to accomplishing our joint purpose and to ensuring that any decisions are informed by risk assessments.*

**Owen Paterson former UK Environment Minister in a secret letter to Syngenta about neonicotinoids (April 2013) in which EDCs were mentioned<sup>64</sup>**

*"You raise the point that this issue is one of several that impact on the availability of pesticides in agriculture. We are well aware of this point and you will know that amongst other things, the UK has been arguing hard for a proportionate approach to regulating Endocrine Disrupting Chemicals."*

**US EPA declares that glyphosate is not an endocrine disruptor but most of the studies come from Monsanto and are unpublished**

The US Environmental Protection Agency published a Report on 29 June 2015 Weight of Evidence (WoE) assessment evaluating results of the Endocrine Screening Program (EDSP) for glyphosate.<sup>65</sup> However, under FOI, *The Intercept* discovered that "out of 32 studies, just five were independently funded.<sup>66</sup> The other 27 were funded by Monsanto. Not surprisingly, all 27 of the industry-backed studies concluded that glyphosate does not cause endocrine disruption – even though data within those studies might suggest otherwise." In fact most of them were unpublished and came from, or were funded variously by, Syngenta, the Glyphosate Task Force, US EPA, Ceetox Kalamazoo (Pfizer).

**Industry is still trying to weaken the criteria for EDCs, despite having been accused of supplying statistics for EFSA and BfR**

Philip Lightowler of *Chemical Watch* (an industry journal) reported on 23/11/2016.

"An international conference, hosted by the Fresenius Academy in Bonn last week, heard that leading scientists have reached a consensus that environmental risk assessment for endocrine-disrupting chemicals (EDCs) is scientifically sound."<sup>67</sup>

Consultant ecotoxicologist, Peter Matthiessen, reported that this conclusion was reached at the Society of Environmental Toxicology and Chemistry (Setac) Pellston workshop, held in Florida earlier this year. They found that tools for measuring the environmental effects of oestrogenic, androgenic, thyroid and steroidogenic compounds are now largely in place, as are methods for their interpretation and extrapolation to populations, according to Dr Matthiessen. "Despite the need for continuing development of tools, our workshop concluded that, in most cases, it is possible to establish safe levels for EDCs," he said. They "do have threshold concentrations for populations and, with adequate data, conducting environmental risk assessment of them is scientifically sound."

And if such a consensus was possible for the environment Dr Matthiessen told *Chemical Watch* then a similar approach for human health cannot be far behind.

Lennart Weltje, conference chairman and ecotoxicologist at BASF, commented that the

<sup>64</sup> <http://www.guardian.co.uk/environment/interactive/2013/apr/29/environment-secretary-letter-syngenta-insecticide-ban>

<sup>65</sup> [https://www.epa.gov/sites/production/files/2015-06/documents/glyphosate-417300\\_2015-06-29\\_trx0057175.pdf](https://www.epa.gov/sites/production/files/2015-06/documents/glyphosate-417300_2015-06-29_trx0057175.pdf)

<sup>66</sup> <http://www.healthynaturalcures.org/feds-used-monsanto-funded-studies-determine-glyphosate-containing-weedkillers-safe/>

<sup>67</sup> [https://chemicalwatch.com/51177/environmental-risk-assessment-of-edcs-scientifically-sound?pa=true#utm\\_campaign=51114&utm\\_medium=email&utm\\_source=alert](https://chemicalwatch.com/51177/environmental-risk-assessment-of-edcs-scientifically-sound?pa=true#utm_campaign=51114&utm_medium=email&utm_source=alert)

Pellston workshop “helped tremendously” in getting a feeling for study quality and what it is like conducting a weight-of-evidence approach.

*“In the end, all agreed that risk assessment is fully appropriate, once remaining uncertainties have been addressed,”* he added.

Dr Weltje’s views reflect a general feeling, at the conference, that although there were disagreements about EDC criteria, there was greater consensus when data was available and compounds were considered on a case-by-case basis.

Daniel Pickford, a senior ecotoxicologist from Syngenta, presented an examination in Bonn of one such case: the fungicide propiconazole (made by Syngenta) and its endocrine activity. *In vitro* assays show the compound is an aromatase enzyme inhibitor and, therefore, likely to cause masculinisation. However, *in vivo* assays on mammals and birds show no effects, and though there are effects in fish at high doses, environmental exposure is unlikely to reach these levels. Field data show that exposure to the fungicide is erratic and experiments show that fish recovery from any effect is rapid.

So there was agreement on the decision that, on current evidence, propiconazole should not be considered an endocrine disruptor.

### ***Le Monde* calls for Europe not to allow industry to manipulate the criteria for EDCs**

Let’s stop the manipulation of science<sup>68</sup>

Around a hundred scientists ask Europe and the international community to act against endocrine disrupting chemicals. They condemn the use of strategies for manufacturing doubt employed by industries in the climate change battle.

## **The legacy of PCBs in Wales when they were banned in the US: the Government accused of a cover-up over toxic waste**

### **When PCBs were banned in the US for causing ill health in Anniston, Alabama, the Heath Government agreed to ramp up production in a Monsanto-owned factory in Wales in 1971**

A Monsanto-owned factory was built in Newport in 1949. They paid contractors to illegally dump 67 chemicals such as PCBs, dioxins and Agent Orange derivatives between 1965 and 1972: Brofiscin Quarry one of the most contaminated places in Britain, is polluting Cardiff

Polychlorinated biphenyls (PCBs) were manufactured by Monsanto from 1930-1977 primarily for insulating fluids in heavy-duty electrical equipment in plants. They were toxic and persistent in the environment and were EDCs. *“The Anniston and other scandals led to the banning of PCB production in America in 1971. During that period– and up until 1977, when the UK government reluctantly followed suit – PCB production was ramped up at Newport, creating even more wastes. While Brofiscin and Maendy quarries took the bulk of these, five other quarries across Wales and into the north of England were also used as Monsanto dumping grounds. It is not clear that any were prepared (lined and sealed) to accept such wastes. Both Brofiscin and Maendy certainly weren’t and both are porous: Brofiscin being limestone, and Maendy sandstone, which means that the wastes slowly and inevitably leach into the waterways, groundwater, and major aquifers. Of particular concern today is that Brofiscin stands above an underground reservoir that might well in the future be used as a public water supply.”*<sup>69</sup> The UK government, which knew of the dangers of PCBs

<sup>68</sup> [http://www.lemonde.fr/idees/article/2016/11/29/let-s-stop-the-manipulation-of-science\\_5039867\\_3232.html](http://www.lemonde.fr/idees/article/2016/11/29/let-s-stop-the-manipulation-of-science_5039867_3232.html)

<sup>69</sup>

[http://www.theecologist.org/investigations/politics\\_and\\_economics/269077/exclusive\\_how\\_the\\_envi](http://www.theecologist.org/investigations/politics_and_economics/269077/exclusive_how_the_envi)



in the environment in the 1960s, allowed their production in Wales until 1977.<sup>70</sup>

*"In 2003, the residents of Groesfaen began to complain about vile smells emanating from the Brofiscin quarry, a 36-meter deep quarry located at the edge of the village.<sup>71</sup> More alarming still, the waters of the stream that flowed around the quarry began to turn vivid orange...The investigation revealed that a Monsanto-owned plant in Newport (a city near Groesfaen) had paid contractors to illegally dump thousands of tons of cancer-causing chemicals - among them PCBs, dioxins and Agent Orange derivatives - into the Brofiscin quarry between 1965 and 1972. These chemicals, which had corroded their containers and were leaching into the soil, not only endangered the lives of the local villagers but also those of the more than 350,000 residents of Cardiff, since the chemicals were coming into contact with a major underground aquifer that was (and still is) destined to be the city's main water supply."*

The Environment Agency - a government agency concerned with flooding and pollution – was hired to clean up the site in 2005.

*"Firstly, the Agency repeatedly failed to hold Monsanto accountable for its role in the pollution (a role that Monsanto denied from the outset). Secondly, the Agency consistently downplayed the dangers of the chemicals themselves, even claiming that they offered no "identifiable harm or immediate danger to human health" in their official report" In 2007<sup>72</sup> previously unseen Environment Agency documents from 2005 show that almost 30 years after being filled, Brofiscin is one of the most contaminated places in Britain. According to engineering company WS Atkins, in a report prepared for the agency and the local authority in 2005 **but never made public**, the site contains at least 67 toxic chemicals. Seven PCBs have been identified, along with vinyl chlorides and naphthalene. The unlined quarry is still leaking, the report says. "Pollution of water has been occurring since the 1970s, the waste and groundwater has been shown to contain significant quantities of poisonous, noxious and polluting material, pollution of ... waters will continue to occur." Douglas Gowan, a pollution consultant who produced the first official report into the Brofiscin quarry in 1972 after nine cows on a local farm died of poisoning, said: "The authorities have known about the situation for years, but have done nothing. There is evidence of not only negligence and utter incompetence, but cover-up, and the problem has grown unchecked. The documents show that in 1953, company chemists tested the PCB chemicals on rats and found that they killed more than 50% with medium-level doses. However, it continued to manufacture PCBs and dispose of the wastes in South Wales until 1977, more than a decade after evidence of widespread contamination of humans and the environment was beyond doubt." In 2013 an association was found between PCB serum levels and non-Hodgkin lymphoma (NHL).*

#### **PCB and other organochlorine residues in the people of Wales**

Duarte-Davidson *et al* studied PCBs and other organochlorines in 75 adipose tissue samples from human cadavers throughout 1990 and early 1991 from Welsh populations<sup>73</sup> They commented on the: *"little changes in the concentrations of these compounds in the Welsh population over the last decade, despite reduction in their use that came into force in the 1970s."*

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[environment\\_agency\\_is\\_gagging\\_one\\_eyewitness\\_to\\_what\\_is\\_potentially\\_one\\_of\\_the\\_uk's\\_biggest\\_environmental\\_crimes.html](#)

<sup>70</sup> <https://www.theguardian.com/guardian/2007/feb/12/frontpagenews.uknews>

<sup>71</sup> [http://www.naturalnews.com/044009\\_Monsanto\\_Brofiscin\\_environmental\\_damage.html](http://www.naturalnews.com/044009_Monsanto_Brofiscin_environmental_damage.html)

<sup>72</sup> <https://www.theguardian.com/environment/2007/feb/12/uknews.pollution1>

<sup>73</sup> <https://www.ncbi.nlm.nih.gov/pubmed/15091726>

But they weren't aware that the Whitehall government had only reluctantly banned them in 1977 and had allowed Monsanto to stockpile the wastes in quarries all over Wales. In the study by WWF- UK in 2003<sup>74</sup>, although it was small, a single person tested in Cardiff had: the highest level of chemicals (3105 ng/g lipid) tested for; the highest level of organochlorine pesticides tested for; and the highest level of total DDT and metabolites. It is hardly surprising that the Agrochemical Industry persuaded the Advertising Standards Authority to ban the advertisement of the baby and rapidly got WWF-UK to replace the CEO.

#### **Monsanto has finally been found guilty of gross negligence in the US: May 2016**

However, Monsanto has finally been found guilty of gross negligence by selling poisonous PCBs to members of the public, some of whom died as a result.<sup>75</sup> The agrochemical and agricultural biotechnology giant has been forced to pay a total of \$46 million in damages to plaintiffs in the case. A St. Louis jury voted 10-2 in finding Monsanto, Pfizer, Solutia, and Pharmacia guilty in the selling of polychlorinated biphenyls, or PCBs, after the compound had been banned. One Monsanto document dated September 20, 1955 reported by EcoWatch stated: *"We know Aroclors [PCBs] are toxic but the actual limit has not been precisely defined,"* Plaintiffs in this case — three of nearly 100 involved in litigation, some of whom died — said they developed non-Hodgkin lymphoma from exposure to PCBs. *"This is the future,"* plaintiff's attorney Steven Kherkher told EcoWatch, explaining his law firm had to 'pool resources' to initiate the lawsuit. *"The only reason why this victory is rare is because no one has had the money to fight Monsanto."* However, he added, mentioning his firm has around 1,000 plaintiffs surrounding PCBs, *"It's not going to be rare anymore."* Kherkher also explained as more cases against the company come to court, *"every judge allows us to acquire more and more information from Monsanto and discover their documents. There is a lot more information out there yet to be mined."*

#### **Mustard gas manufacture and storage in Wales: secret stockpiling of Mustard Gas and other chemicals by the Winston Churchill Government near Mold**

These are quotations from a report by Andrew P Smith with the full permission of Defra, the Department of the Environment, Food and Rural Affairs.<sup>76</sup> *"The Winston Churchill Government had been stockpiling Mustard Gas with a view to its use in WW2. Mustard production at the manufacturing sites near Mold in Flintshire, Wales started in 1939/40 and ceased in April 1945 and between 1946 and 1948 the associated plant and facilities were decommissioned. By April 1959 the entire stockpile had been sent for destruction and dismantling and decontamination of all the remaining pipework and equipment was completed by April 1960. From the 1960s the site was used as a buffer depot for the storage of a variety of non-perishable foodstuffs such as sugar and flour. In 1994 Defra was charged with cleaning up the site. However, investigation of the toxic burial pit marked by "Headstones" north of the tunnel entrances found contamination with chemical warfare degradation products, dioxins, asbestos and heavy metals."* It was noted that although there were bats hunting in the area there was no evidence that they were living in the storage tunnels. *"Burnt material from the toxic burial and soil from the adjoining river bank were found to contain high dioxin concentrations and some carbon tetrachloride contamination was identified in a couple of soil samples."*

### **The legacy of our food being poisoned by chemicals**

<sup>74</sup> <http://www.wwf.org.uk/filelibrary/pdf/biomonitoringresults.pdf>

<sup>75</sup> <http://yournewswire.com/monsanto-loses-lawsuit-pays-46-million-to-poisoned-victims/>

<sup>76</sup> [http://www.subbrit.org.uk/rsg/sites/r/rhydymwyn/defra\\_1.html](http://www.subbrit.org.uk/rsg/sites/r/rhydymwyn/defra_1.html)

**Our Daily Poison: From Pesticides to Packaging, How Chemicals Have Contaminated the Food Chain and Are Making Us Sick.<sup>77</sup>**

Marie-Monique Robin is an awardwinning French journalist and filmmaker and author of the above book. She was the patron of the Monsanto Tribunal and on the Steering Committee. She received the 1995 Albert-Londres Prize, awarded to investigative journalists in France. She is the director and producer of more than thirty documentaries.

*"Pull at the corner of any recent public health scandal, and you can find the fingerprints of the multinationals that profit from lax regulation. In this muckraking exposé, Marie-Monique Robin lays bare the hidden history of the chemical industry and its long trail into the present. Unless you're part of the international lobbying set, you'll be shocked by the global connections between regulatory agencies, the corporations that have nestled into them, and the betrayal of public health that they have licensed. For anyone concerned about democracy, corporate power or public health, this is a gripping and urgent book"* Raj Patel, author of Stuffed and Starved

*"Marie-Monique Robin's Our Daily Poison is a gift to citizens across the world. She brings us scientific facts about pesticides and poisons in a period when this evidence is being kept from the public. Whether you are interested in your health and the safety of your food, the protection of species and ecosystems, or the independence of science and laws from corporate law, this is a book you must read."* Vandana Shiva, author of Stolen Harvest and Making Peace with the Earth

**Genetically-engineered crops, glyphosate and the deterioration of health in the United States of America. Swanson et al.<sup>78</sup>**

Abstract: A huge increase in the incidence and prevalence of chronic diseases has been reported in the United States (US) over the last 20 years. Similar increases have been seen globally. The herbicide glyphosate was introduced in 1974 and its use is accelerating with the advent of herbicide-tolerant genetically engineered (GE) crops. Evidence is mounting that glyphosate interferes with many metabolic processes in plants and animals and glyphosate residues have been detected in both.

Glyphosate disrupts the endocrine system and the balance of gut bacteria, it damages DNA and is a driver of mutations that lead to cancer.

In the present study, US government databases were searched for GE crop data, glyphosate application data and disease epidemiological data. Correlation analyses were then performed on a total of 22 diseases in these time-series data sets. The Pearson correlation coefficients are highly significant ( $< 10^{-5}$ ) between glyphosate applications and hypertension ( $R = 0.923$ ), stroke ( $R = 0.925$ ), diabetes prevalence ( $R = 0.971$ ), diabetes incidence ( $R = 0.935$ ), obesity ( $R = 0.962$ ), lipoprotein metabolism disorder ( $R = 0.973$ ), Alzheimer's ( $R = 0.917$ ), senile dementia ( $R = 0.994$ ), Parkinson's ( $R = 0.875$ ), multiple sclerosis ( $R = 0.828$ ), autism ( $R = 0.989$ ), inflammatory bowel disease ( $R = 0.938$ ), intestinal infections ( $R = 0.974$ ), end stage renal disease ( $R = 0.975$ ), acute kidney failure ( $R = 0.978$ ) cancers of the thyroid ( $R = 0.988$ ), liver ( $R = 0.960$ ), bladder ( $R = 0.981$ ), pancreas ( $R = 0.918$ ), kidney ( $R = 0.973$ ) and myeloid leukaemia ( $R = 0.878$ ).

The Pearson correlation coefficients are highly significant ( $< 10^{-4}$ ) between the percentage of GE corn and soy planted in the US and hypertension ( $R = 0.961$ ), stroke ( $R = 0.983$ ), diabetes prevalence ( $R = 0.983$ ), diabetes incidence ( $R = 0.955$ ), obesity ( $R = 0.962$ ), lipoprotein metabolism disorder ( $R = 0.955$ ), Alzheimer's ( $R = 0.937$ ), Parkinson's ( $R = 0.952$ ), multiple sclerosis ( $R = 0.876$ ), hepatitis C ( $R = 0.946$ ), end stage renal disease ( $R = 0.958$ ), acute kidney failure ( $R = 0.967$ ), cancers of the thyroid ( $R = 0.938$ ), liver ( $R = 0.911$ ), bladder ( $R = 0.945$ ),

<sup>77</sup> <http://thenewpress.com/books/our-daily-poison>

<sup>78</sup> [http://www.organic-systems.org/journal/92/JOS\\_Volume-9\\_Number-2\\_Nov\\_2014-Swanson-et-al.pdf](http://www.organic-systems.org/journal/92/JOS_Volume-9_Number-2_Nov_2014-Swanson-et-al.pdf)

pancreas ( $R = 0.841$ ), kidney ( $R = 0.940$ ) and myeloid leukaemia ( $R = 0.889$ ). The significance and strength of the correlations show that the effects of glyphosate and GE crops on human health should be further investigated.

In the US glyphosate and GM crops have high correlations with human diseases, including cancers.

#### **How glyphosate damages human metabolism by suppressing metabolic pathways**

Samsel A and Seneff S (2013) Glyphosate's suppression of Cytochrome P450 enzymes and amino acid biosynthesis by the gut microbiome: Pathways to Modern Diseases.<sup>79</sup>

*Abstract: Glyphosate, the active ingredient in Roundup®, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise. Residues are found in the main foods of the Western diet, comprised primarily of sugar, corn, soy and wheat. Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body. Here, we show how interference with CYP enzymes acts synergistically with disruption of the biosynthesis of aromatic amino acids by gut bacteria, as well as impairment in serum sulfate transport. Consequences are most of the diseases and conditions associated with a Western diet, which include gastrointestinal disorders, obesity, diabetes, heart disease, depression, autism, infertility, cancer and Alzheimer's disease. We explain the documented effects of glyphosate and its ability to induce disease, and we show that glyphosate is the "textbook example" of exogenous semiotic entropy: the disruption of homeostasis by environmental toxins.*

#### **Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance.**<sup>80</sup>

*Abstract: Celiac disease, and, more generally, gluten intolerance is a growing problem worldwide, but especially in North America and Europe, where an estimated 5% of the population now suffers from it. Symptoms include nausea, diarrhea, skin rashes, macrocytic anemia and depression. It is a multifactorial disease associated with numerous nutritional deficiencies as well as reproductive issues and increased risk to thyroid disease, kidney failure and cancer. Here, we propose that glyphosate, the active ingredient in the herbicide, Roundup®, is the most important causal factor in this epi demic. Fish exposed to glyphosate develop digestive problems that are reminiscent of celiac disease. Celiac disease is associated with imbalances in gut bacteria that can be fully explained by the known effects of glyphosate on gut bacteria. Characteristics of celiac disease point to impairment in many cytochrome P450 enzymes, which are involved with detoxifying environmental toxins, activating vitamin D3, catabolizing vitamin A, and maintaining bile acid production and sulfate supplies to the gut. Glyphosate is known to inhibit cytochrome P450 enzymes. Deficiencies in iron, cobalt, molybdenum, copper and other rare metals associated with celiac disease can be attributed to glyphosate's strong ability to chelate these elements. Deficiencies in tryptophan, tyrosine, methionine and selenomethionine associated with celiac disease match glyphosate's known depletion of these amino acids. Celiac disease patients have an increased risk to non-Hodgkin's lymphoma, which has also been implicated in glyphosate exposure. Reproductive issues associated with celiac disease, such as infertility, miscarriages, and birth defects, can also be explained by glyphosate. Glyphosate residues in wheat and other crops are likely increasing recently due to the growing practice of crop desiccation just prior to the harvest. We argue that the practice of "ripening" sugar cane*

<sup>79</sup> <http://www.mdpi.com/1099-4300/15/4/1416>

<sup>80</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/>

with glyphosate may explain the recent surge in kidney failure among agricultural workers in Central America. We conclude with a plea to governments to reconsider policies regarding the safety of glyphosate residues in foods.

### **Glyphosate, pathways to modern diseases III: Manganese, neurological diseases, and associated pathologies<sup>81</sup>**

**Abstract:** Manganese (Mn) is an often overlooked but important nutrient, required in small amounts for multiple essential functions in the body. A recent study on cows fed genetically modified Roundup® Ready feed revealed a severe depletion of serum Mn. Glyphosate, the active ingredient in Roundup®, has also been shown to severely deplete Mn levels in plants. Here, we investigate the impact of Mn on physiology, and its association with gut dysbiosis as well as neuropathologies such as autism, Alzheimer's disease (AD), depression, anxiety syndrome, Parkinson's disease (PD), and prion diseases. Glutamate overexpression in the brain in association with autism, AD, and other neurological diseases can be explained by Mn deficiency. Mn superoxide dismutase protects mitochondria from oxidative damage, and mitochondrial dysfunction is a key feature of autism and Alzheimer's. Chondroitin sulfate synthesis depends on Mn, and its deficiency leads to osteoporosis and osteomalacia. Lactobacillus, depleted in autism, depends critically on Mn for antioxidant protection. Lactobacillus probiotics can treat anxiety, which is a comorbidity of autism and chronic fatigue syndrome. Reduced gut Lactobacillus leads to overgrowth of the pathogen, Salmonella, which is resistant to glyphosate toxicity, and Mn plays a role here as well. Sperm motility depends on Mn, and this may partially explain increased rates of infertility and birth defects. We further reason that, under conditions of adequate Mn in the diet, glyphosate, through its disruption of bile acid homeostasis, ironically promotes toxic accumulation of Mn in the brainstem, leading to conditions such as PD and prion diseases

### **Glyphosate, pathways to modern diseases IV: cancer and related pathologies<sup>82</sup>**

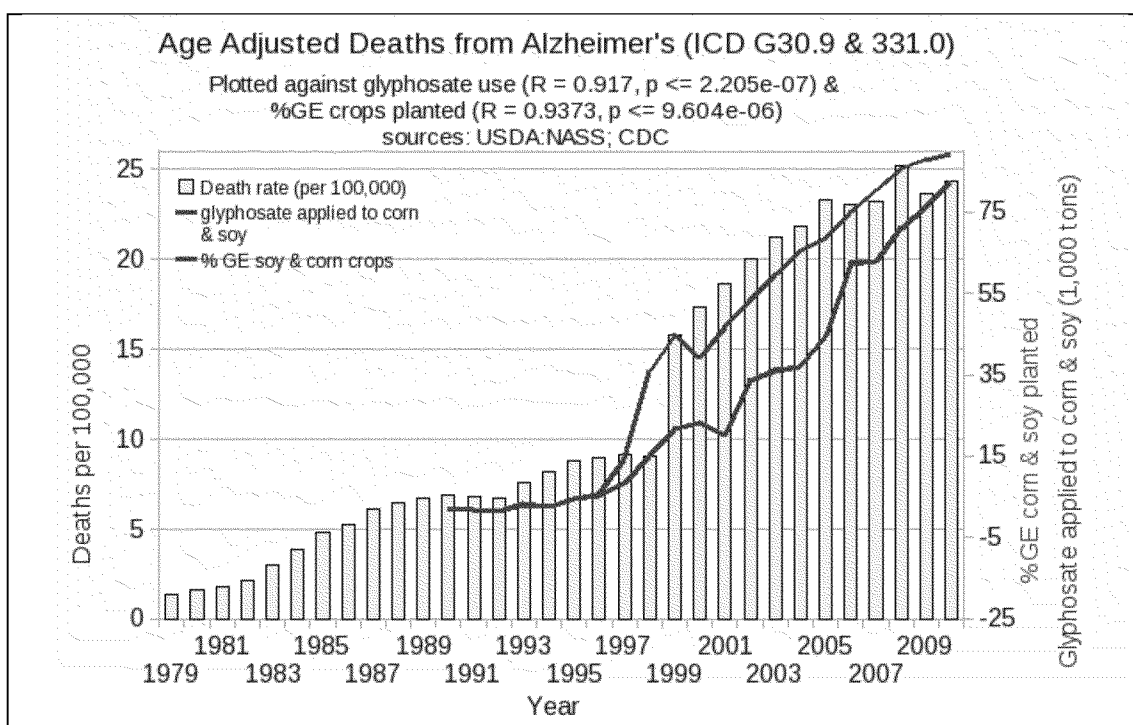
**Abstract:** Glyphosate is the active ingredient in the pervasive herbicide, Roundup, and its usage, particularly in the United States, has increased dramatically in the last two decades, in step with the widespread adoption of Roundup® Ready core crops. The World Health Organization recently labelled glyphosate as "probably carcinogenic." In this paper, we review the research literature, with the goal of evaluating the carcinogenic potential of glyphosate. Glyphosate has a large number of tumorigenic effects on biological systems, including direct damage to DNA in sensitive cells, disruption of glycine homeostasis, succinate dehydrogenase inhibition, chelation of manganese, modification to more carcinogenic molecules such as N-nitrosoglyphosate and glyoxylate, disruption of fructose metabolism, etc. Epidemiological evidence supports strong temporal correlations between glyphosate usage on crops and a multitude of cancers that are reaching epidemic proportions, including breast cancer, pancreatic cancer, kidney cancer, thyroid cancer, liver cancer, bladder cancer and myeloid leukaemia. Here, we support these correlations through an examination of Monsanto's early studies on glyphosate, and explain how the biological effects of glyphosate could induce each of these cancers. We believe that the available evidence warrants a reconsideration of the risk/benefit trade-off with respect to glyphosate usage to control weeds, and we advocate much stricter regulation of glyphosate.

### **Glyphosate pathways to modern diseases V: Amino acid analogue of glycine in diverse proteins<sup>83</sup>**

<sup>81</sup> [http://www.surgicalneurologyint.com/temp/SurgNeuroInt6145-4381109\\_121011.pdf](http://www.surgicalneurologyint.com/temp/SurgNeuroInt6145-4381109_121011.pdf)

<sup>82</sup> [https://www.academia.edu/17751562/Glyphosate\\_pathways\\_to\\_modern\\_diseases\\_IV\\_cancer\\_and\\_related\\_pathologies](https://www.academia.edu/17751562/Glyphosate_pathways_to_modern_diseases_IV_cancer_and_related_pathologies)

**Abstract:** *Glyphosate, a synthetic amino acid and analogue of glycine, is the most widely used biocide on the planet. Its presence in food for human consumption and animal feed is ubiquitous. Epidemiological studies have revealed a strong correlation between the increasing incidence in the United States of a large number of chronic diseases and the increased use of glyphosate herbicide on corn, soy and wheat crops. Glyphosate, acting as a glycine analogue, may be mistakenly incorporated into peptides during protein synthesis. A deep search of the research literature has revealed a number of protein classes that depend on conserved glycine residues for proper function. Glycine, the smallest amino acid, has unique properties that support flexibility and the ability to anchor to the plasma membrane or the cytoskeleton. Glyphosate substitution for conserved glycines can easily explain a link with diabetes, obesity, asthma, chronic obstructive pulmonary disease (COPD), pulmonary edema, adrenal insufficiency, hypothyroidism, Alzheimer's disease, amyotrophic lateral sclerosis (ALS), Parkinson's disease, prion diseases, lupus, mitochondrial disease, non-Hodgkin's lymphoma, neural tube defects, infertility, hypertension, glaucoma, osteoporosis, fatty liver disease and kidney failure. The correlation data together with the direct biological evidence make a compelling case for glyphosate action as a glycine analogue to account for much of glyphosate's toxicity. Glufosinate, an analogue of glutamate, likely exhibits an analogous toxicity mechanism. There is an urgent need to find an effective and economical way to grow crops without the use of glyphosate and glufosinate as herbicides.*



#### Declines in educational attainment in Britain over recent years

The UK ratings have declined significantly in the Programme for International Student Assessment. PISA is a worldwide study by the Organisation for Economic Co-operation and Development (OECD) in member and non-member nations of 15-year-old school pupils' scholastic performance on mathematics, science, and reading.<sup>84</sup> PISA was first performed in 2000 and then repeated every three years. It is done with a view to improving education

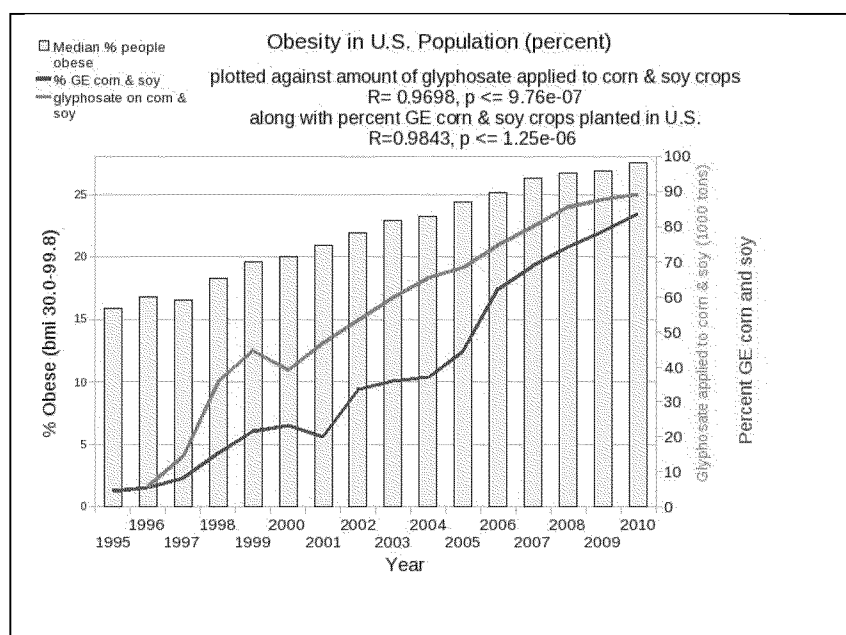
<sup>83</sup> <http://www.amsi.ge/jbpc/11616/03SA16A.pdf>

<sup>84</sup> [http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-\(PISA\)/PISA-2012/index.html](http://www.cmec.ca/252/Programs-and-Initiatives/Assessment/Programme-for-International-Student-Assessment-(PISA)/PISA-2012/index.html)

policies and outcomes. It measures problem solving and cognition in daily life. The UK is falling behind global rivals in international tests taken by 15-year-olds, failing to make the top 20 in mathematics, reading and science (3 December 2013). Although not directly comparable, because there have been different numbers of countries taking part, this marks a sustained decline, with the UK having ranked 4<sup>th</sup> in the tests taken in 2000. In 2016 an OECD study showed that in England the young have lower basic skills than their counterparts in Europe.<sup>85</sup> But adults approaching retirement age (55-65 year-olds) in England compare reasonably well with their counterparts in other countries. The study says: *"The priority of priorities is therefore to improve the standard of basic schooling in England, improving both average and minimum standards (which are especially weak in England)."*

**Proof that obesity is a problem related to glyphosate: a study showed that by 2025, the UK will have the highest obesity rates among both men and women in Europe, at 38%: in contrast in France women have had virtually no increase in BMI over 40 years**

A study on obesity published in the Lancet in March 2016 says: *"About a fifth of all adults around the world and a third of those in the UK will be obese by 2025, with potentially disastrous consequences for their health"*.<sup>86</sup> The Lancet Study says there is zero chance that the world can meet the target set by the UN for halting the climbing obesity rate by 2025. *"Over the past 40 years, we have changed from a world in which underweight prevalence was more than double that of obesity, to one in which more people are obese than underweight,"* said senior author Prof Majid Ezzati from the School of Public Health at Imperial College London. *"The English-speaking world is particularly badly affected. The UK will have the highest obesity among both men and women in Europe, at 38%."* In contrast: *"Against the trend of steadily rising weight, women in some countries had virtually no increase in BMI over the 40 years – in Singapore, Japan, and a few European countries including Czech Republic, Belgium, **France**, and Switzerland."*



<sup>85</sup> <http://www.oecd.org/unitedkingdom/building-skills-for-all-review-of-england.pdf>

<sup>86</sup> <http://www.theguardian.com/society/2016/mar/31/one-fifth-of-worlds-adults-will-be-obese-by-2025-study-predicts>

Graph 1 US data for % GE corn and soy crops planted and glyphosate applied to corn & soy plotted against % of U.S. population who are obese (BMI 30.099.8). Crop and glyphosate data from the USDA; obesity data from U.S. CDC. By kind permission of Dr Nancy Swanson.

### **Death rate in England and Wales has increased by 5.6% in 2015<sup>87</sup>**

Prof Dominic Harrison, Director of Public Health in Blackburn and Darwen says that England and Wales have seen the biggest jump in the number of deaths a year for a whole generation.

Public Health England says it is monitoring the provisional data and its officials say a particularly bad strain of flu and an ineffective vaccine may be behind the rise.

Prof Harrison's own analysis backs up figures in the Health Service Journal which suggest there have been 5.6% more deaths in England and Wales in 2015 than in the previous year - the biggest increase in the national death rate since the 1960s.

Taken together he says the figures suggest "something is making the population more vulnerable to death." And he says the findings are unlikely to be fully explained by winter infections or a rise in the elderly population.

## **The global legacy of aspartame, Monsanto's neurotoxic sweetener**

### **Why Monsanto chose Britain to be the Rapporteur Member State with backup from EFSA**

Aspartame was first synthesised in 1965 in the US. It is an addictive, excite-neurotoxic, carcinogenic, genetically engineered drug and adjuvant that damages the mitochondria and interacts with drugs and vaccines. For the first 16 years the FDA banned it. Aspartame was shown by FDA scientists to cause brain tumours, epilepsy and neurotoxic effects. However, the CEO of Searle that manufactured aspartame was a man called Donald Rumsfeld. He and President Ronald Reagan (a man famed for his deregulation of the US EPA) between them managed to get it passed for use in a wide number of fizzy diet drinks in 1982. It has been approved for use in Britain since then. In 1985 (when Monsanto purchased Searle, that held the patent to aspartame) the late FDA toxicologist, Dr Adrian Gross, confirmed to congress that it was highly neurotoxic (1985, Senate) and that aspartame violated the Delaney Amendment because it caused brain tumors and brain cancer.<sup>88</sup> Many independent researchers have confirmed its dangers but industry studies say it is safe.

In 2007 a Review was published in *Nature*: Direct and indirect cellular effects of aspartame on the brain.<sup>89</sup> "*Aspartame is composed of phenylalanine (50%), aspartic acid (40%) and methanol (10%). Phenylalanine plays an important role in neurotransmitter regulation, whereas aspartic acid is also thought to play a role as an excitatory neurotransmitter in the central nervous system. Glutamate, asparagines and glutamine are formed from their precursor, aspartic acid. Methanol, which forms 10% of the broken down product, is converted in the body to formate, which can either be excreted or can give rise to formaldehyde, diketopiperazine (a carcinogen) and a number of other highly toxic derivatives.*"

The UK is the Rapporteur Member State for aspartame Monsanto's controversial sweetener. EC rules specify that the RMS be chosen by Industry.<sup>90</sup> It appears that the Committee on Toxicity of Chemicals in foods (CoT) had only consulted industry literature, since they have allowed aspartame to be approved since 1982.

Professor David Coggon was Chairman at the time of the latest reassessment of aspartame.

<sup>87</sup> <http://www.bbc.co.uk/news/uk-england-35589564>

<sup>88</sup> <http://www.mpwhi.com/main.htm>

<sup>89</sup> <http://www.nature.com/ejcn/journal/v62/n4/full/1602866a.html>

<sup>90</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009R1107>



*"At its meeting on 29 October 2013, the Committee on Toxicity of Chemicals in foods (CoT) discussed a paper, describing results from a study led by scientists at Hull York Medical School" ... CoT POSITION PAPER ON A DOUBLE BLIND RANDOMIZED CROSSOVER STUDY OF ASPARTAME.<sup>91</sup> No one is allowed to see this study until it has been accepted for publication in a peer-reviewed journal. "The Committee judged the delay acceptable since the results presented did not indicate any need for action to protect the health of the public." EFSA has also re-evaluated the safety of aspartame.<sup>92</sup> As a result, it concluded in December 2013 that 'aspartame and its breakdown products are safe for human consumption at current levels of exposure'.*

Independent scientist Erik Millstone<sup>93</sup> Professor in Science & Technology Policy, Sussex University sent a 67-page detailed response to the Head of EFSA 'Food Ingredients and Packaging' Unit and the Senior Scientific Officer.<sup>94</sup> He strongly disputed their re-assessment. EFSA ignored his response, just as the US EPA ignored evidence from Dr Betty Martini and Dr John Olney.<sup>95</sup>

### **Newly leaked emails from John Podesta (Chairman of Hillary Clinton's presidential campaign) discuss Rumsfeld's involvement in aspartame approval<sup>96</sup>**

*"John Podesta's leaked emails have turned up a number of damning pieces confirming the collusion between the soda industry and high level officials within the U.S. government, including Hillary Clinton. In a recent batch of leaked emails, Donald Rumsfeld's involvement in the approval of aspartame is discussed. Rumsfeld served as White House chief of staff from 1974 to 1975. He was also secretary of defense from 1975 to 1977, and again from 2001 to 2006.*

## **Genetically Engineered Foods: The Biggest Fraud in the History of Science**

### **Governments and leading scientific institutions have systematically misrepresented the facts about GMOs and the scientific research that casts doubt on their safety**

On 4 March 2015 the Organisation Beyond GM facilitated the Press Release of American public interest attorney Steven Druker's acclaimed new book, Altered Genes, Twisted Truth How the Venture to Genetically Engineer Our Food Has Subverted Science, Corrupted Government and Systematically Deceived the Public

His book reveals how governments and leading scientific institutions have systematically misrepresented the facts about GMOs and the scientific research that casts doubt on their safety.<sup>97</sup>

GM Watch reported: *"The book features a foreword by the renowned primatologist Dame Jane Goodall, who will also speak at the conference, hailing it as "without doubt one of the most important books of the last 50 years."*

*The book's revelations come at a crucial time when the UK is considering the commercial planting of GM crops following the European Parliament's decision to allow member states*

<sup>91</sup> <http://cot.food.gov.uk/pdfs/cotposponaspar.pdf>

<sup>92</sup> <http://www.food.gov.uk/news-updates/news/2013/dec/efsa-aspartame#.UuAtV3xFDcs>

<sup>93</sup> Professor of Science Policy at the University of Sussex

<sup>94</sup> [http://sro.sussex.ac.uk/43821/1/EM\\_Letter\\_to\\_EFSA\\_on\\_Aspartame\\_22Feb2013.pdf](http://sro.sussex.ac.uk/43821/1/EM_Letter_to_EFSA_on_Aspartame_22Feb2013.pdf)

<sup>95</sup> <http://www.scribd.com/doc/6669992/Dr-John-Olney-Statement-Aspartame-1987> Dr. John Olney's letter to the Senate in 1987.

<sup>96</sup> <http://articles.mercola.com/sites/articles/archive/2016/11/09/podesta-aspartame-dangers.aspx>

<sup>97</sup> <http://www.gmwatch.org/index.php/news/archive/2015-articles/15973>

*to opt out of the blockade that has barred them from the EU until now. Based on the evidence presented in the book, Druker and Goodall will assert that it would be foolhardy to push forward with a technology that is unacceptably risky and should never have been allowed on the market in the first place. The book is the result of more than 15 years of intensive research and investigation by Druker, who came to prominence for initiating a lawsuit against the US Food and Drug Administration (FDA).*

**Steven Druker initiated a lawsuit against the US Food and Drug Administration (FDA) that forced it to open its files on GM foods**

*Those files revealed that GM foods first achieved commercialisation in 1992 only because the FDA:*

- \* Covered up the extensive warnings of its own scientists about their dangers*
  - \* Lied about the facts*
  - \* And then violated federal food safety law by permitting these foods to be marketed without having been proven safe through standard testing*
- "Druker's well-referenced book points out that if the FDA had actually heeded its own experts' advice, told the truth and obeyed the law, the GM food venture would have imploded and never gained traction anywhere." There were extensive media resources<sup>98</sup> but the launch wasn't reported in the mainstream media. It is not surprising since members of eminent societies and some editors of scientific journals and philanthropists in the UK & US are supporting GM.<sup>99</sup>*

**Druker challenges UK Royal Society over misleading statements made about GM foods**

Open Letter to the UK Royal Society can be read here.<sup>100</sup>

*Extracts: "Because clarifying the facts about GM foods is crucial for developing an intelligent, science-based policy on the future of agriculture, and because the Royal Society has significantly contributed to the confusion that currently surrounds this issue, it is imperative that remedial action be promptly initiated. This is especially so considering that:*

- ∞ The European Commission is about to approve substantial regulatory changes in regard to GM crops.*
- ∞ The UK is seriously considering allowing them to be commercially planted.*
- ∞ The Society and other proponents of GM foods have inculcated the widespread illusion that there is an overwhelming scientific consensus that the safety of these products has been established through rigorous testing..."*

*Unless you promptly take these steps, it will demonstrate that your commitment to promoting GM foods is stronger than your commitment to honoring the truth and upholding the integrity of science. FURTHER, whether or not you own up to your irresponsible actions and take the steps specified above, I challenge you to read my book and specifically list any inaccurate statements of fact that you find in it, accompanied by an explanation of why the statement is erroneous and a reference to the evidence that corroborates your assertion."*

**The Royal Society supports GM crops but refuses to have a rational debate about them**

Dr Brian John of GM-Free-Cymru wrote an Open Letter to the President of the Royal Society Sir Paul Nurse on 26/01/2011.<sup>101</sup> It was in response to a BBC Horizon programme in which Sir

<sup>98</sup> <http://beyond-gm.org/altered-genes-twisted-truth-media-resources/>

<sup>99</sup> Royal Society, Wellcome Foundation, Bill & Melinda Gates, Lord David Sainsbury and the Gatsby Foundation, Rothamsted Research, John Innes Centre, Sainsbury Laboratory, Civil Servants from Defra, NFU, James Hutton Institute, BIS, Offices of Life Sciences, Centre for Food Security, Food Standards Agency, etc.

<sup>100</sup> [http://beyond-gm.org/wp-content/uploads/2015/03/DRUKER\\_OPEN-LETTER-TO-THE-ROYAL-SOCIETY\\_Final.pdf](http://beyond-gm.org/wp-content/uploads/2015/03/DRUKER_OPEN-LETTER-TO-THE-ROYAL-SOCIETY_Final.pdf)

Paul examined some of the reasons why the public at large is profoundly sceptical about science and scientists with regard to global warming and GM. Dr John says: *"For more than a decade now, scientists working in the GM field have mounted vicious personal attacks (sometimes politically rather than scientifically motivated) upon serious scientists who have had the temerity to discover 'uncomfortable things about GM crops and foods'. This trend started with the vitriolic treatment meted out (with the Royal Society in the vanguard) on Arpad Pusztai and Stanley Ewen a decade ago, and continued with the crucifixion of Ignacio Chapela and David Quist, Angelika Hilbeck, Maewan Ho, Judy Carman, Gilles-Eric Seralini, Andrés Carrasco, Manuela Malatesta, Christian Velot, Irina Ermakova and many others... You will be aware that there has never been a single piece of epidemiological research to back up the claims that GM foods are entirely safe to eat. Since the earliest days of the GM enterprise, the industry has set itself against such research, and governments, regulators and august bodies like the Royal Society have connived in this cunning little plan, allowing GM advocates like Julian Little (Bayer) to trot out this sort of nonsense: 'two trillion meals containing GM ingredients have been consumed with no adverse health effects.' As we all know, there are abundant animal feeding studies that show that GM components in the diet lead to physiological changes and cell damage. The American Academy of Environmental Medicine drew attention to studies that indicate "serious health risks associated with GM food consumption including infertility, immune dysregulation, accelerated aging, dysregulation of genes associated with cholesterol synthesis, insulin regulation, cell signalling, and protein formation, and changes in the liver, kidney, spleen and gastrointestinal system". They concluded that: "There is more than a casual association between GM foods and adverse health effects. There is causation ..."*

**Steven Druker says that there has been silence following his challenge to the Royal Society**  
*"The Royal Society wants us to take its word that GM crops are safe and healthy", writes Steven Druker on June 2015 in The Ecologist.<sup>102</sup> "But it refuses to retract its errors, apologise to those whose reputations it has impugned, or enter into constructive debate on the issue. To restore its scientific integrity, it must abide by its own motto." "Scientific truths are not merely asserted, nor are they created by the authority of the speaker, no matter how eminent. They must be firmly rooted in evidence and rational argument."*

#### **Druker talks about the Royal Society's preposterous pretensions**

*"But neither he nor the Society have acknowledged the errors, or provided any reply to the allegations made. Instead, the misrepresentation of reality has been amplified. In response to media inquiries about the challenge, here's the official statement that the institution provides:" "The Royal Society bases its views on evidence, evidence that has been closely scrutinized by people with expert knowledge and that has stood up to that scrutiny. Personal opinions and unsubstantiated anecdotes are unhelpful to having a rational public debate on science and the use of new technologies."*

#### **The Society dismissed one of the most rigorous studies yet performed on a GMO food**

*"Nor has the Society faced up to the fact that it dispensed multiple misrepresentations, and otherwise behaved unethically, in order to discredit the solid, and unsettling, research conducted at the Rowett Institute under the direction of Dr. Arpad Pusztai, one of the world's foremost experts in food safety. That study<sup>103</sup> is still one of the most rigorous yet performed*

<sup>101</sup> [http://www.gmfrecymru.org.uk/open\\_letters/Open\\_letter26Jan2011.html](http://www.gmfrecymru.org.uk/open_letters/Open_letter26Jan2011.html)

<sup>102</sup> [http://www.theecologist.org/blogs\\_and\\_comments/commentators/2921277/the\\_royal\\_societys\\_assault\\_on\\_the\\_science\\_of\\_gm\\_foods\\_must\\_cease.html](http://www.theecologist.org/blogs_and_comments/commentators/2921277/the_royal_societys_assault_on_the_science_of_gm_foods_must_cease.html)

<sup>103</sup> <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140673698058607.pdf>

on a GM food, and it's still highly relevant because it controlled for the effects of the new foreign protein - which entails that the adverse results it registered were attributable to a broader feature of the genetic engineering process itself.

And that is why proponents of GM foods cannot abide it and have ardently attacked it- with the Royal Society leading the charge.

As documented in my letter, first the Society savaged the research without having seen the complete data, which prompted the editor of *The Lancet* to rebuke it for its "breath-taking impertinence." It then strove to prevent the research from being published. And after the research eventually was published in *The Lancet* despite the attacks, the Society continued to misleadingly malign it."

#### **Royal Society's 'deafening silence' on GMOs**

Colin Todhunter wrote in *The Ecologist* on 03/06/2015:<sup>104</sup> "It is now three months since Steven Druker addressed the Royal Society in his open letter and 44 days since 20 April. There appears to have been no response from The Royal Society - and certainly not a public one - except for a brief and deliberately insulting statement issued today." (See the underlined statement above).

"The Royal Society is the preeminent scientific body within the UK that advises the government. It therefore has an obligation to the British public to provide a public response and 'put the record straight' on GMOs - not least because the current staunchly pro-GMO Cameron-led administration will likely sanction the planting of GM crops in England within the next couple of years, and the Transatlantic Trade and Investment Partnership (TTIP) deal could open the floodgates to GM foods appearing on the shelves of UK supermarkets."

The purpose of The Royal Society is, according to its website, to "recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity."

#### **How the GE food venture has been chronically based on deception<sup>105</sup>**

Steve Druker writes again in August 2016: "Although it purports to be based on solid science and the open flow of information on which science depends, the massive venture to reconfigure the genetic core of the world's food supply has substantially relied on the propagation of falsehoods. Its advancement and very survival have been crucially and chronically dependent on the misrepresentation of reality- to the extent that more than thirty years after the creation of the first genetically engineered plant, the vast majority of people the world-over (including most government officials, journalists, and even scientists) continue to be misled about the important facts..

So if the world's oldest and most respected scientific institution cannot argue for the safety of GE foods without systematically distorting the facts, it indicates that such distortion is essential to the argument. Moreover, when the multitude of distortions and deceptions that have been issued on behalf of these products over the last thirty-five years are compiled and irrefutably documented (as in my book), the conclusion that the GE food venture could not have survived without them becomes virtually inescapable."

**A journalist asked the late Dr Maewan Ho: doesn't Genetic Modification follow what nature does already? No it breaks all the rules of evolution**

<sup>104</sup>

[http://www.theecologist.org/blogs\\_and\\_comments/commentators/2893487/gmos\\_the\\_royal\\_societys\\_deafening\\_silence.html](http://www.theecologist.org/blogs_and_comments/commentators/2893487/gmos_the_royal_societys_deafening_silence.html)

<sup>105</sup> <https://www.independentsciencenews.org/health/how-the-ge-food-venture-has-been-chronically-dependent-on-deception/>

In April 2004, Anastasia Stephens,<sup>106</sup> a journalist from the Evening Standard, interviewed the late Dr Maewan Ho, Geneticist and Co-Director of the former Institute of Science in Society. *AS "Doesn't genetic modification follow what nature does already- the evolutionary principle of genetic selection?"*

*MWH "No, GM breaks all the rules of evolution, it short circuits evolution altogether. It bypasses reproduction, creates new genes and gene combinations that have never existed, and is not restricted by the usual barriers between species."*

### **Call for justice for the many people poisoned by organophosphates: a massive cover up by HSE, Defra and the government**

The Francis Crick Institute in London has just been opened; a sheep dip sufferer muses as to why they are spending so much money when many of the researchers have known all along what the problems are: exposure to agricultural poisons

Richard Bruce recently sent an email reflecting on the Queen's opening of the £700 million Francis Crick Institute, which will have some £130 million in annual funding. *"It is the biggest research building under one roof in the entire European Union employing some 1500 scientists and staff. Its aim is to find new ways to prevent, diagnose and treat conditions"*

Richard Bruce who has an extensive knowledge on the effects of organophosphates that are used far more widely in agriculture than just sheep dip. He personally was badly affected by Actellic an OP insecticide used in grain stores, muses about the opening of this edifice<sup>107</sup> He has tried to find out why MAFF had made yearly sheep dips compulsory with organophosphorus compounds in 1979 and biannually in 1984 then suddenly stopped them in 1992.

Organophosphate Sheep Dip 10 June 2015 Westminster Hall debates: Jessica Morden MP speaks on behalf of Andy Burnham<sup>108</sup> *"We want a full inquiry, independent of DEFRA, to allow us to question why farmers might have been compelled to use this chemical with no guidance if governmental research pointed to health impacts. Was compulsory dipping stopped because MAFF knew it was affecting farm workers' and farmers' health? If so, why did it not say so? We need an answer to that question in particular."* Organophosphorus compounds are likely to be responsible for Gulf War syndrome and may be associated with Aerotoxic Syndrome in pilots and cabin crew as a result of exposure to OPs in engine oil. Sarah Mackenzie Ross and colleagues performed a meta-analysis of 14 studies involving 1600 participants.<sup>109</sup> Although Defra had denied a link, Mackenzie Ross found that there was a significant association between low-level exposure to OPs and impaired neurobehavioural function primarily involving cognitive functions, psychomotor speed, executive function, visuospatial ability, working and visual memory.

[Chlorpyrifos, an OP compound, is still approved by the Chemicals Regulation Directorate. Glyphosate is also an organophosphorus compound. Labour MP Andy Burnham said: *"Farmers who allegedly suffered as a result of organophosphate (OP) sheep dip poisoning are entitled to a 'Hillsborough-style disclosure' of the truth."*]

Richard Bruce goes on: it is said to be *"a world-leading centre of biomedical research and innovation, it has scale, vision and expertise to tackle the most challenging scientific*

<sup>106</sup> <http://www.i-sis.org.uk/GMmyths.php>

<sup>107</sup> <https://gmandchemicalindustry9.wordpress.com/2016/11/28/causes-of-diseases-are-already-well-known-but-nothing-is-done-to-remove-those-causes/>

<sup>108</sup> <https://www.theyworkforyou.com/whall/?id=2015-06-10a.130.0>

<sup>109</sup> <http://www.tandfonline.com/doi/pdf/10.3109/10408444.2012.738645>

*questions underpinning health and disease. The aim is to find new ways to prevent, diagnose and treat conditions such as cancer, heart disease and stroke, infections and neurodegenerative conditions like motor neurone disease."*

**Richard's post states that the cause of these illnesses is already well-known and has been known for a very long time but nothing is done to remove those causes. He says that protecting the poisons industry seems to be the real aim: "*Poisoned people earn the industry £millions in drug sales and research*" .**

He asks, "*Why is the Medical Research Council now implying that it does not understand the ever present danger not only to the occupationally exposed but to everyone, adult, child and unborn, exposed as we are in our food, clothes, furniture, fuels, paints, oils and our environment?*" He asks: "**Do they need all that money to re-discover what they already know?**"

"The Medical Research Council (MRC), Cancer Research UK, Wellcome, University College London, Imperial College London and King's College London are involved ". Richard comments: "*Some interesting names there with staff who must know what is really going on*" and summarises his post examining what the MRC actually knew and what it has reported over the decades."

[My Comment: Bearing in mind that Cancer Research UK has conflicts of interest and the Wellcome Trust hosts the Industryfunded Science Media Centre, the links with the Rockefeller Foundation and Bill and Melinda Gates Foundation becomes even more significant.]

Is it even more significant that the new CEO of the Frances Crick Institute Sir Paul Nurse, former President of the Royal Society, came from the Rockefeller Foundation?

**The Royal Society champions GM crops, but Sir Paul Nurse, to whom Steve Druker first laid down his challenge about GM crops being The Biggest Fraud in the History of Science was greeted by silence from the President**

**Threat of overpopulation: is there a depopulation initiative?**

On the initiative of Bill Gates, in May 2009 some of America's richest people met to discuss ways of tackling a 'disastrous' environmental, social and industrial threat of overpopulation at the home of Sir Paul Nurse,<sup>110</sup> a British Nobel prize biochemist and President (elected in 2003) of the private Rockefeller University in Manhattan.<sup>111</sup> David Rockefeller Jr. hosted the meeting. These same individuals have met several times since to develop "strategy in which population growth would be tackled..."<sup>112</sup>

**The Rockefeller Foundation (RF) funded the earliest research on GMOs**

The RF funded the earliest research on GMOs in the 1940s and founded the science of 'molecular biology' that reduced the complexity of life to a single gene that was not stable out of the test tube. It was called reductionism.<sup>113</sup> The RF's 100<sup>th</sup> Anniversary Agriculture website says:<sup>114</sup> "*Since the 1970s, the techniques pioneered by the RF have been criticized for their environmental impact, for their relationship with big agribusiness, and for failing to eliminate hunger completely.*" The RF also founded the 'Green Revolution'. "*As one analyst*

<sup>110</sup> There was some doubt as to whether he was present or not.

<http://www.theguardian.com/world/2009/may/31/new-york-billionaire-philanthropists>

<sup>111</sup> <http://www.globalresearch.ca/billionaire-club-in-bid-to-curb-overpopulation/13736>

<sup>112</sup> <http://www.prophecynewswatch.com/2014/March20/202.html>

<sup>165</sup> <http://www.globalresearch.ca/doomsday-seed-vault-in-the-arctic-2/23503>

<sup>114</sup> <http://rockefeller100.org/exhibits/show/agriculture>

*put it, in effect, the Green Revolution was merely a chemical revolution. At no point could developing nations pay for the huge amounts of chemical fertilizers and pesticides.”<sup>115</sup>*

**The Islington Tribune interviewed Sir Paul Nurse <sup>116</sup>**

*“He is now the Nobel Prize-winning chief executive of the £700 million medical research centre The Frances Crick Institute, which towers over the historic blocks of social housing in Somers Town.” After some discussion about the local housing and how they had tried to accommodate them by building community facilities within the Institute, Sir Paul added: “Now I’m off to The Royal Entomological Society, I’m being made a fellow. I’m interested in butterflies and beetles.” [I’m sorry Sir Paul, they have all been wiped out in the UK by the agrochemical industry that you are promoting.]*

## **Biocides Regulations in the European Union make a lot of money for European Regulators and the Pesticides Industry**

**REACH (Registration, Evaluation, Authorisation and Restriction of Chemical substances):** The Biocidal Product Regulation (BPR, Regulation (EU) 528/2012) concerns the placing on the market and use of biocidal products, which are used to protect humans, animals, materials or articles against harmful organisms, like pests or bacteria, by the action of the active substances contained in the biocidal product.<sup>117</sup>

*“REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals, while **enhancing the competitiveness of the EU chemicals industry**. It also promotes alternative methods for the hazard assessment of substances in order to reduce the number of tests on animals.”* It came into force on 02/08/07.

*Exponent Inc.* is a company that helps chemical firms with **REACH** compliance.<sup>118</sup> It describes itself as “a research and scientific consultant firm with clients from industry (including crop protection) and government.” *Exponent Inc.* was employed by Bayer to criticise EFSA’s work on neonicotinoids and bees in 2013. It also contributed to a review by a Dow employee (Dow manufactures chlorpyrifos that is still authorised by CRD) that concluded that “exposure to specific pesticides during critical periods of brain development and neurobehavioral outcomes is not compelling.”<sup>119</sup> Dr Caroline Harris, a Vice-President of *Exponent Inc* was on the UK Advisory Committee on Pesticides even before it became the Expert Committee on Pesticides (a conflict of interest).

### **A global industry has emerged to advise on Biocides Regulation. The British Government is also making a lot of money out of it because BiocidesHub is based in the UK**

As with the regulation of pesticides, it is controlled by the pesticides industry and based in the UK. Biocides Symposia are held regularly around the world to “get up-to-speed on all that’s new in biocidal products regulation” to “stay one step ahead.” Courses are from £300-400 per day to \$1585 for a Symposium. A multitude of firms have clients from ‘industry, crop protection and government’. Chemical Watch **BiocidesHub** (Shrewsbury) offers 13 Events on Biocides Regulation in 2016, ranging from beginners courses to advanced courses.

<sup>115</sup> <http://www.globalresearch.ca/doomsday-seed-vault-in-the-arctic-2/23503>

<sup>116</sup> <http://www.islingtontribune.com/scientists-moving-super-lab>

<sup>117</sup> <https://echa.europa.eu/regulations/biocidal-products-regulation>

<sup>118</sup> <http://www.exponent.com/REACH/>

<sup>119</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23777200>

**A Road map produced by DG Sante and EFSA to plan the future of pesticides regulation:**<sup>120</sup>  
**this is despite the BfR and EFSA being accused of intentional scientific fraud in its reassessment of glyphosate by the German Parliamentary Committee on Agriculture and Food it is clearly 'business as usual'**

*"The Commission approves active substances (i.e. the agent used to achieve the protective effect) for the use in PPP (i.e. the end product) in a very strict regulatory framework. It also sets maximum levels for their residues (MRLs) in foodstuffs, in order to protect consumers, and regulates the use of PPP to further reduce possible risks and impacts. PPP are indispensable in agriculture but their use may involve risks to human and animal health and to the environment. Food and feed containing pesticides residues above the allowed MRLs must not be placed on the EU market (including imported products)."*

## **BIOCIDES HAVE NO PLACE IN AGRICULTURE. A BIOCIDES IS A SUBSTANCE THAT IS KILLING ALL LIFE**

### **Predictions for the future of farming with biocides in the UK and the US**

- ∞ People born in 1960 will have a one in two chance of getting cancer during their lifetime.
- ∞ In 1970, the incidence of autism in the US was 1:10,000. In 2007 it was 1:150. In 2009 it was 1:100. In 2013 it is 1:50 and by 2025 it will be 1:2, i.e. 50%.
- ∞ By 2050 the incidence of people with vision loss from cataracts and macular degeneration will be doubled.
- ∞ Obesity: by 2025 the UK will have the highest obesity rates among both men and women in Europe, at 38%: in contrast in France women have had virtually no increase in BMI over 40 years.
- ∞ Diabetes: WHO said worldwide in 1980 108 million people had diabetes; in 2014, this had risen to 422 million. This is predicted to rise steeply

### **Human health depends on biodiversity**

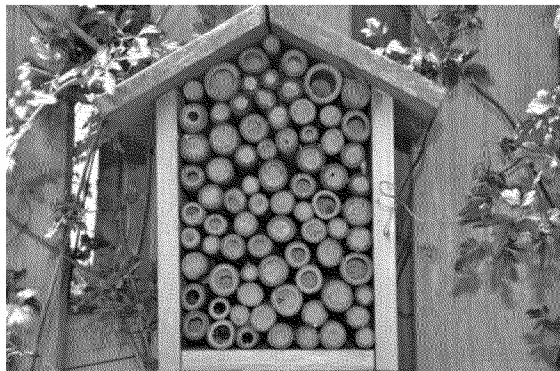
Dr Eric Chivian founded the Center for Health and the Global Environment at Harvard Medical School in 1996 *"To help people understand that our health, and that of our children, depends on the health of the environment and that we must do everything we can to protect it"*. He and Aaron Bernstein co-edited a book: *Sustaining Life. How Human Health Depends On Biodiversity* that included contributions from more than 100 leading biodiversity and health scientists and co-sponsored by the United Nations Development Programme, the United Nations Environment Programme, the Secretariat of the Convention on Biological Diversity and the World Conservation Union

**As the Chairman of the Judges of the International Monsanto Tribunal, Francoise Tulkens said, "We will try to deliver the legal opinion before December 10th, the International Day of Human Rights. It will be addressed to Monsanto and to the United Nations. From this legal opinion, other jurisdictions can be involved and more judges will step in. We, as the judges [at the Monsanto Tribunal] have seen, heard, noted and deliberated. Chances are that the international law will take into consideration new issues such as the ones related to ecocide."**<sup>121</sup>

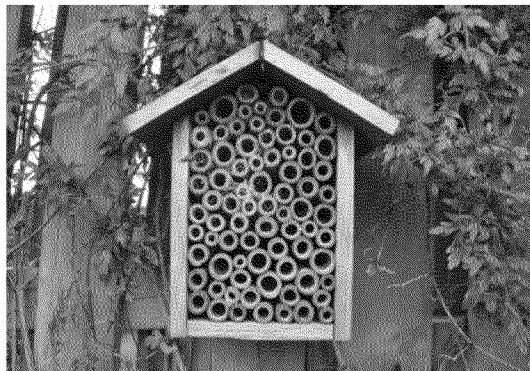
<sup>120</sup> [http://ec.europa.eu/smart-regulation/roadmaps/docs/2016\\_sante\\_197\\_evaluation\\_plant\\_protection\\_products\\_en.pdf](http://ec.europa.eu/smart-regulation/roadmaps/docs/2016_sante_197_evaluation_plant_protection_products_en.pdf)

<sup>121</sup> <http://www.gmwatch.org/news/latest-news/17273-chair-of-the-monsanto-tribunal-explains-what-it-means-and-what-it-might-do>





June 29 2015



July 06 2016

During the summer and autumn of 2016, the Swansea City and County Council authorised the spraying of 3,000 km of Roundup on city roadsides in a 'war on weeds' (There's no hiding place for weeds) *Swansea Leader*.

Rosemary Mason MB ChB FRCA

December 1 2016